

Montgomery County Employees' Retirement System

Actuarial Valuation as of July 1, 2021



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October 1, 2021

Ms. Linda Herman
Executive Director
Montgomery County Employees' Retirement System
101 Monroe Street, 15th Floor
Rockville, Maryland 20850

Dear Linda:

We are pleased to provide our formal annual Actuarial Valuation Report as of July 1, 2021 for the Montgomery County Employees' Retirement System ("System"). The actuarial valuation was performed at the request of Montgomery County ("County") and is intended for use by the County and the System and those designated by the County and the System. This report may be provided to parties other than the County and System only in its entirety and only with the permission of the County and System. GRS is not responsible for unauthorized use of this report.

The purposes of the actuarial valuation are to measure the funding progress of the System and to determine the recommended annual contribution to the System for the Plan Year commencing July 1, 2022, and ending on June 30, 2023. Information required by GASB Statement Nos. 67 and 68 is provided in a separate report. This report should not be relied on for any purpose other than the purposes described herein. Determinations of financial results, associated with the benefits described in this report, for purposes other than those identified above may be significantly different.

The recommended annual contribution in this report is determined using the actuarial assumptions and methods disclosed in Section C of this report. This report includes risk metrics on page A-6 but does not include a more robust assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment.

This actuarial valuation assumed the continuing ability of the plan sponsor to make the contributions necessary to fund this plan. A determination regarding whether or not the plan sponsor is actually able to do so is outside the scope of this assignment and was not performed.

The actuarial valuation was based upon information furnished by the County Staff, concerning benefits provided by the Montgomery County Employees' Retirement System, financial transactions, plan provisions and census data for active members, terminated members, retirees and beneficiaries as of July 1, 2021. We checked for internal and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by the County Staff.

This report was prepared using actuarial assumptions adopted by the Board as authorized under Montgomery County Code. All actuarial assumptions used in this report are reasonable for the purposes of this actuarial valuation and meet the parameters set forth in the Actuarial Standards of Practice issued by the Actuarial Standards Board. Additional information about the actuarial assumptions is included in the Section C of this report. The actuarial assumptions used in this actuarial valuation are based on an experience review covering the period July 1, 2014 to July 1, 2018 and were first adopted for use beginning with the actuarial valuation as of July 1, 2019. We recommend an annual review of the price inflation assumption of 2.50 percent and the investment return assumption of 7.50 percent, as market conditions continue to be volatile and capital market assumptions have decreased compared to prior years.

We have recommended a change to the amortization policy for Groups A and H (which are closed to new members) effective with the actuarial valuation as of July 1, 2021, and presented some alternatives for an update to the amortization policy in a separate letter. Because the System is over 100 percent funded, we recommend a review and update to the funding policy for all groups to define the policy for County contributions when the System has a surplus and also to consider whether combining the outstanding amortization bases would be appropriate. The results in this report reflect the current policy, which (1) amortizes the unfunded liability (or surplus) for Groups A and H over a remaining closed period of three years (with a County contribution rate no less than 0 percent for each group) and (2) amortizes the unfunded liability (or surplus) for the open groups over separate 20-year closed amortization periods.

The plan provisions have remained unchanged since the last valuation, performed as of July 1, 2020.

This report was prepared using our proprietary valuation model and related software which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled. We are relying on the GRS actuaries and Internal Software, Training and Processes Team who developed and maintain the model.

This report reflects the impact of COVID-19 through June 30, 2021. However, this report does not reflect the longer term and still developing future impact of COVID-19, which is likely to further influence demographic experience and economic expectations. We will continue to monitor these developments and their impact on the Fund and the actuarial assumptions. Actual experience will be reflected in each subsequent annual valuation, as experience emerges.

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge the information contained in this report is accurate and fairly presents the actuarial position of the Montgomery County Employees' Retirement System as of the actuarial valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

Lance J. Weiss and Amy Williams are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions herein.



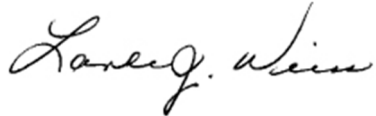
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The signing actuaries are independent of the plan sponsor.

We will be pleased to review this report with you at your convenience.

Respectfully submitted,

Gabriel, Roeder, Smith & Company



Lance J. Weiss, E.A., M.A.A.A., F.C.A.
Senior Consultant and Team Leader



Amy Williams, A.S.A., M.A.A.A., F.C.A.
Senior Consultant

LW/AW:rl



SECTION A

ACTUARIAL VALUATION RESULTS

Comments on the Actuarial Valuation

At your request, we have performed an actuarial valuation of the Montgomery County Employees' Retirement System as of July 1, 2021.

The purposes of this actuarial valuation are as follows:

- To determine the funding status of the System as of the actuarial valuation date;
- To determine the recommended contribution for the fiscal year beginning July 1, 2022; and
- To provide other data required by the System.

Accounting information required under Governmental Accounting Standards Board ("GASB") Statement Nos. 67 and 68 is presented in a separate report.

We received the data from the Montgomery County Employees' Retirement System Staff. We performed certain checks for reasonableness and found the data to be complete and reliable for actuarial valuation purposes. However, we did not audit the data.

A total of 6,214 active members (excluding DRSP and DROP) were included in the actuarial valuation as of July 1, 2021. Between the 2020 and 2021 actuarial valuations, the number of active employees increased by 10 members. The average annual actuarial valuation pay (excluding DRSP and DROP) increased by 0.4 percent, from \$81,183 to \$81,490 between the 2020 and 2021 actuarial valuation. The number of benefit recipients (including DRSP and DROP) increased from 6,783 to 6,843, or 0.9 percent, since the last actuarial valuation. The average monthly benefit increased by 5.1 percent, from \$3,315 to \$3,483. Section B summarizes the membership data.

There is a group of retirees who have benefits that are insured by Aetna. The total benefit amount reported for each of these members in the actuarial valuation report includes the insured benefit amount. However, the actuarial liabilities exclude the value of the insured benefits. The actuarial liabilities included in the actuarial valuation for these members are for benefits in excess of the insured benefit and represent cost of living adjustments provided by the Montgomery County Employees' Retirement System.

Section C outlines the actuarial assumptions and methods used in the actuarial valuation. The actuarial assumptions used in this actuarial valuation are the same as those used in the last actuarial valuation as of July 1, 2020, and are based on an experience review covering the period July 1, 2014 to July 1, 2018. We recommend an annual review of the price inflation assumption of 2.50 percent and the investment return assumption of 7.50 percent, as market conditions continue to be volatile and capital market assumptions have decreased compared to prior years.

We have estimated, based on 2021 capital market assumptions from 12 financial firms, that the probability of achieving an average return of 7.50 percent over the next 10 years is less than 50 percent. Therefore, we recommend adopting a lower investment return assumption in order to increase the probability of achieving the actuarial return assumption over the next 10 years.

The assumption for administrative expenses is equal to 105 percent of the average of the prior three years' administrative expenses. This amount has increased from \$3,148,000 to \$3,192,900.

Section D outlines the principal benefit provisions of the System. The plan provisions used in this actuarial valuation are the same as those used in the actuarial valuation at July 1, 2020.



Comments on the Actuarial Valuation (Continued)

During the plan year ending June 30, 2021, the unfunded actuarial accrued liability (“UAAL”) decreased from \$34,993,927 as of July 1, 2020, to a surplus of \$144,860,075 as of July 1, 2021, which is a decrease of \$179,854,002. The key factors contributing to the decrease in the UAAL were (1) favorable investment experience, (2) contributions under the funding policy that are expected to decrease the UAAL, and (3) favorable demographic experience. The favorable experience was partially offset by higher than expected cost of living (COLA) increases for retired members. (The COLA increase was 3.797 percent compared to an assumed COLA increase of 2.50 percent for benefits attributable to service prior to July 1, 2011, and an assumed COLA increase of 2.20 percent for benefits attributable to service on or after July 1, 2011. For members who receive an increase based on 60 percent of CPI, the actual increase was 2.278 percent compared to an assumption of 1.50 percent from last year’s valuation.)

On a market value basis, the Plan assets had an investment return of approximately 26.34 percent¹ (net of investment expenses). Recognition of investment losses during fiscal year ending 2020 were offset by recognition of the fiscal year end 2017, 2018, 2019, and 2021 investment gains. The net investment gains resulted in an estimated net asset rate of return of 11.51 percent on an actuarial value of assets basis, which compares to the assumed rate of return of 7.50 percent.

The funded ratio (ratio of assets to liabilities) increased from 99.2 percent to 103.2 percent on an actuarial value of assets basis, and increased from 97.9 percent to 116.0 percent on a market value of assets basis between the 2020 and 2021 actuarial valuations.

The funded ratio and unfunded actuarial accrued liability are useful for assessing the need for and the amount of future unfunded liability contributions (excludes normal cost contributions). They are not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the System's benefit obligations.

¹ As provided by Montgomery County ERS.

Recommended County Contributions

The total contribution rate is equal to the normal cost rate plus amortization of the unfunded liability as a level percentage of payroll. The amortization policy was updated beginning with the actuarial valuation as of July 1, 2015. The unfunded liability as of July 1, 2015 (and in each future year) for Groups A and H (which are closed to new members) is amortized over a single closed period of 9 years (3 years remaining at the actuarial valuation as of July 1, 2021 to amortize the total unfunded liability). The unfunded liability as of July 1, 2015, for the Public Safety groups (Groups E, F and G), Group J and GRIP was amortized over a closed period of 20 years (14 years remaining at the actuarial valuation as of July 1, 2021) and the unfunded liability bases established in each subsequent year are amortized over separate 20-year closed periods.

We have recommended a change to the amortization policy for Groups A and H (which are closed to new members) effective with the actuarial valuation as of July 1, 2021, and presented some alternatives for an update to the amortization policy in a separate letter. Because the System is over 100 percent funded, we recommend a review and update to the funding policy for all groups to define the policy for County contributions when the System has a surplus and also to consider whether combining the outstanding amortization bases would be appropriate. The results in this report reflect the current policy, which (1) amortizes the unfunded liability (or surplus) for Groups A and H over a remaining closed period of three years (with a County contribution rate no less than 0 percent for each group) and (2) amortizes the unfunded liability (or surplus) for the open groups over separate 20-year closed amortization periods.



Comments on the Actuarial Valuation (Continued)

The single equivalent amortization period for the System in total as of July 1, 2021, is 7.6 years. The single equivalent amortization period is 3 years for the closed Non-Public Safety groups (Groups A and H), 34.4 years for the non-GRIP open groups (Public Safety groups and Group J) and 13.9 years for GRIP as of July 1, 2021. There is currently a surplus for all groups except Group G and therefore, the amortization periods relate to amortizing the surplus.

The total contribution rate minus the average employee contribution rate equals the County contribution rate. The actuarial valuation as of July 1, 2020 established the County contribution rate for fiscal year beginning July 1, 2021 and ending June 30, 2022. This actuarial valuation as of July 1, 2021, establishes the County contribution rate for fiscal year beginning July 1, 2022, and ending June 30, 2023. Due to the significant asset gains during the plan year ending June 30, 2021, and the very short remaining amortization period for Groups A and H under the current funding policy, the payment to amortize the surplus over the remaining three-year period more than offset the County normal cost rate. Therefore, the County contribution rate was set to 0 percent for Groups A and H.

Non-GRIP

The unfunded liability by group as of July 1, 2021, was calculated as the difference between the actuarial accrued liability and the actuarial value of assets as of July 1, 2021. The unfunded liability as of July 1, 2021 is amortized over a single closed three-year period for Groups A and H. The unfunded liability for Groups E, F, G and J, as of July 1, 2015, was amortized over an initial closed period of 20 years (14 years remaining at the actuarial valuation as of July 1, 2021) as a level percentage of payroll. The additional unfunded liability from each subsequent actuarial valuation, beginning with the actuarial valuation as of July 1, 2016, is amortized over a 20-year closed period as a level percentage of payroll. Additional details on the unfunded liability and amortization payments by group can be found in Section C.

The amortization base for GRIP is separately tracked. Outside agencies are separately amortizing their portion of the non-GRIP unfunded liability as a level dollar amount over a 20-year closed period as of July 1, 2015 (10-year closed period for Strathmore Hall and Washington Suburban Transit Commission). In determining the unfunded actuarial accrued liability base and amortization of unfunded liability contribution rate for Group A, the non-GRIP outside agencies' unfunded liability was deducted along with excluding the non-GRIP outside agencies' contribution basis payroll for amortization of the unfunded actuarial accrued liability.

The County contribution rates for fiscal year 2023 decreased for both Public Safety and non-Public Safety from the fiscal year 2022 County contribution rate. The decrease in the County contribution rates for Public Safety and non-Public Safety was mainly attributable to favorable asset experience, which significantly decreased the unfunded actuarial accrued liability. Favorable salary and demographic experience also contributed to the decrease in the contribution rates. The non-Public Safety contribution rate is based on a County contribution rate of about 10 percent for Group J and 0 percent for Groups A and H.

The actuarial value of assets is currently approximately 89 percent of the market value of assets. There is \$557,585,770 in net asset gains currently being deferred (\$586,145,132 deferred asset gains in total for GRIP and non-GRIP) that will be phased into the actuarial value of assets over the next four years. Assuming all future assumptions are realized, there is projected to be a decrease in the recommended County contribution as the remaining deferred asset gains are recognized.



Comments on the Actuarial Valuation (Continued)

GRIP

Beginning with the July 1, 2015 actuarial valuation, amortization bases established prior to July 1, 2015, were recombined into a single amortization base equal to the unfunded liability as of July 1, 2015. The unfunded liability for GRIP as of July 1, 2015, was amortized over an initial closed period of 20 years (14 years remaining at the actuarial valuation as of July 1, 2021) as a level percentage of payroll. The additional unfunded liability from each subsequent actuarial valuation is amortized over a separate 20-year closed period as a level percentage of payroll.

The County contribution rate for fiscal year 2023 decreased for GRIP members from the fiscal year 2022 rate. The decrease in the County contribution rate was mainly attributable to favorable asset experience. The increase in the surplus resulted in a reduction to the County contribution rate. The County contribution rate is approximately 0.6 percent of pay lower than the County normal cost rate.

The actuarial value of GRIP assets is approximately 89 percent of the market value of assets. There is \$28,559,362 in net asset gains currently being deferred that will be phased into the actuarial value of assets over the next four years. Assuming all future assumptions are realized, there is projected to be a decrease in the recommended County contribution as the remaining deferred asset gains are recognized.

A separate contribution rate is calculated for the Public Safety agency (CP) than for the Non-Public Safety agencies (CC, CM, CN, CZ). Because agency CP only has two active members and the actuarial accrued liability is over 11 times payroll and the allocated asset value is over 12 times payroll, there is significant volatility in the GRIP Public Safety unfunded liability contribution rate from annual plan experience. The actuarial accrued liability is about 1 times payroll and the allocated asset value is about 1 times payroll for the Non-Public Safety agencies, and therefore, there is much less volatility in the GRIP Non-Public Safety unfunded liability contribution rate. Therefore, we recommend a change to the calculation methodology for the Public Safety and Non-Public Safety GRIP County contribution rates to use the same unfunded liability contribution rate and rate for expenses of administration plus the separate Public Safety/Non-Public Safety County normal cost rate (for benefits).

Risk Measures

RISKS ASSOCIATED WITH MEASURING THE ACCRUED LIABILITY AND ACTUARIALLY DETERMINED CONTRIBUTION

The determination of the accrued liability and the actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability and the actuarially determined contribution that result from the differences between actual experience and the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions due to changing conditions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period, or additional cost or contribution requirements based on the Plan's funded status); and changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

1. **Investment risk** – actual investment returns may differ from the expected returns;
2. **Asset/Liability mismatch** – changes in asset values may not match changes in liabilities, thereby altering the gap between the accrued liability and assets and consequently altering the funded status and contribution requirements;
3. **Contribution risk** – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the plan's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll or other relevant contribution base;
4. **Salary and Payroll risk** – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and contributions differing from expected;
5. **Longevity risk** – members may live longer or shorter than expected and receive pensions for a period of time other than assumed; and
6. **Other demographic risks** – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example, if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the cost of the plan can be expected to increase (or decrease). Likewise, if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

The County contribution rates shown on page A-7 may be considered as a minimum contribution rate that complies with the County's funding policy. The timely receipt of the actuarially determined contributions is critical to support the financial health of the plan. Users of this report should be aware that contributions made at the actuarially determined rate do not necessarily guarantee benefit security.



Risk Measures

PLAN MATURITY MEASURES

Risks facing a pension plan evolve over time. A young plan with virtually no investments and paying few benefits may experience little investment risk. An older plan with a large number of members in pay status and a significant trust may be much more exposed to investment risk. Generally accepted plan maturity measures include the following:

	<u>2020</u>	<u>2021</u>
Ratio of the market value of assets to total payroll	8.60	10.46
Ratio of actuarial accrued liability to payroll	8.79	9.01
Ratio of actives to retirees and beneficiaries ¹	0.91	0.91
Ratio of net cash flow to market value of assets	-0.04	-0.03

¹ DRSP/DROP participants included in the count of retirees and beneficiaries

RATIO OF MARKET VALUE OF ASSETS TO PAYROLL

The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. For example, if the market value of assets is 2.0 times the payroll, a return on assets 5% different than assumed would equal 10% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in plan sponsor contributions as a percentage of payroll.

RATIO OF ACTUARIAL ACCRUED LIABILITY TO PAYROLL

The relationship between actuarial accrued liability and payroll is a useful indicator of the potential volatility of contributions for a fully funded plan. A funding policy that targets a funded ratio of 100% is expected to result in the ratio of assets to payroll and the ratio of liability to payroll converging over time. The ratio of liability to payroll may also be used as a measure of sensitivity of the liability itself. For example, if the actuarial accrued liability is 2.5 times the payroll, a change in liability 2% other than assumed would equal 5% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in liability (and also plan sponsor contributions) as a percentage of payroll.

RATIO OF ACTIVES TO RETIREES AND BENEFICIARIES

A young plan with many active members and few retirees will have a high ratio of active to retirees. A mature open plan may have close to the same number of actives to retirees resulting in a ratio near 1.0. A super-mature or closed plan may have significantly more retirees than actives resulting in a ratio below 1.0.

RATIO OF NET CASH FLOW TO MARKET VALUE OF ASSETS

A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means existing funds are being used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a super-mature plan or a need for additional contributions.

ADDITIONAL RISK ASSESSMENT

Additional risk assessment is outside the scope of the annual actuarial valuation. Additional assessment may include scenario tests, sensitivity tests, stochastic modeling, stress tests and a comparison of the present value of accrued benefits at low-risk discount rates with the actuarial accrued liability.



Summary of Actuarial Valuation Results

		July 1, 2020 Results	July 1, 2021 Results
Membership Data			
	Active Members	6,204	6,214
	DRSP/DROP	176	225
	Deferred Vested	529	603
	Retirees and Beneficiaries	6,607	6,618
	TOTAL	13,516	13,660
Plan Liabilities			
	Actuarial Accrued Liability:		
	Active Members	\$ 1,424,564,557	\$ 1,389,925,067
	DRSP/DROP	175,219,009	238,222,194
	Deferred Vested	39,029,833	46,784,819
	Retirees and Beneficiaries	2,789,234,942	2,890,035,235
	TOTAL	\$ 4,428,048,342	\$ 4,564,967,315
	Actuarial Value of Assets at Valuation Date	\$ 4,393,054,415	\$ 4,709,827,390
	Unfunded (Overfunded) Actuarial Accrued Liability	\$ 34,993,927	\$ (144,860,075)
	Funded Position of Plan's Actuarial Accrued Liability ¹	99.2 %	103.2 %
 Recommended Annual Contribution Requirements ²			
		Fiscal Year 2022	Fiscal Year 2023
	Annual Normal Cost	\$ 81,947,469	\$ 81,334,037
	Normal Cost Expense Load	3,148,000	3,192,900
	Amortization Payment	6,399,896	(9,352,117)
	Total Annual Required Contribution	91,495,365	75,174,820
	Expected Employee Contributions	27,975,345	27,746,742
	County Contribution Requirement	\$ 63,520,020	\$ 47,428,078
	Contribution Basis Payroll:		
	For Normal Cost	\$ 480,772,459	\$ 483,800,856
	For Amortization of Unfunded Liability	\$ 487,791,824	\$ 491,411,433
	County Contribution % of Payroll		
	Public Safety	18.34%	15.32%
	Non-Public Safety	14.41%	1.64%
	GRIP	6.29%	6.12%

¹ Equals the ratio of the actuarial value of assets to the total actuarial accrued liability.

² Includes the Retirement Incentive cost. Excludes the non-GRIP outside agency unfunded liability contribution of \$1,245,769. Includes the GRIP outside agency estimated normal cost and unfunded liability contribution and the non-GRIP estimated normal cost contribution of \$676,486 for fiscal year 2022 and \$653,685 for fiscal year 2023. County estimated contribution is \$62,843,534 for fiscal year 2022 and \$46,774,393 for fiscal year 2023.



Contribution Rate Summary

All Plans

	Valuation as of July 1, 2021										July 1, 2020			
	Non-Public Safety				Public Safety						GRIP	Total	Total Agency	Total
	Group A	Group H	Group J	Total Non PS	Group E	Group F	Group G	Total PS						
County Contribution Requirement (\$)														
Non-GRIP	\$ 1,245,769	\$ -	\$ 1,105,021	\$ 2,350,790	\$ 2,355,094	\$ 9,450,933	\$ 22,781,421	\$ 34,587,448	\$ -	\$ 36,938,238	\$ 1,370,768	\$ 53,758,352		
GRIP	-	-	-	-	-	-	-	-	11,735,609	11,735,609	528,685	11,022,938		
Total All Plans	\$ 1,245,769	\$ -	\$ 1,105,021	\$ 2,350,790	\$ 2,355,094	\$ 9,450,933	\$ 22,781,421	\$ 34,587,448	\$ 11,735,609	\$ 48,673,847	\$ 1,899,453	\$ 64,781,290		
County Normal Cost Contribution Requirement (% of Payroll)														
Non-GRIP	5.90%	5.75%	12.99%	7.04%	13.35%	16.75%	19.35%	17.36%		15.09%	5.90%	14.90%		
GRIP									6.69%	6.69%	6.69%	6.67%		
Total All Plans	5.90%	5.75%	12.99%	7.04%	13.35%	16.75%	19.35%	17.36%	6.69%	11.74%	6.69%	11.88%		
County UAL Contribution Requirement (% of Payroll)														
Non-GRIP	-5.90%	-5.75%	-2.69%	-5.40%	-5.96%	-6.78%	4.13%	-2.04%		-2.82%	NA	2.33%		
GRIP									-0.57%	-0.57%	-0.57%	-0.38%		
Total All Plans	-5.90%	-5.75%	-2.69%	-5.40%	-5.96%	-6.78%	4.13%	-2.04%	-0.57%	-4.78%	NA	1.31%		
Total County Contribution Requirement (% of Payroll)														
Non-GRIP	0.00%	0.00%	10.30%	1.64%	7.39%	9.97%	23.48%	15.32%		12.27%	NA	17.23%		
GRIP									6.12%	6.12%	6.12%	6.29%		
Total All Plans	0.00%	0.00%	10.30%	1.64%	7.39%	9.97%	23.48%	15.32%	6.12%	9.83%	NA	13.19%		

	Valuation as of July 1, 2020										July 1, 2019			
	Non-Public Safety				Public Safety						GRIP	Total	Total Agency	Total
	Group A	Group H	Group J	Total Non PS	Group E	Group F	Group G	Total PS						
County Contribution Requirement (\$)														
Non-GRIP	\$ 5,410,634	\$ 3,860,382	\$ 1,398,084	\$ 10,669,100	\$ 3,614,673	\$ 13,837,315	\$ 25,637,264	\$ 43,089,252	\$ -	\$ 53,758,352	\$ 1,391,893	\$ 57,015,682		
GRIP	-	-	-	-	-	-	-	-	11,022,938	11,022,938	545,863	9,348,250		
Total All Plans	\$ 5,410,634	\$ 3,860,382	\$ 1,398,084	\$ 10,669,100	\$ 3,614,673	\$ 13,837,315	\$ 25,637,264	\$ 43,089,252	\$ 11,022,938	\$ 64,781,290	\$ 1,937,756	\$ 66,363,932		
County Normal Cost Contribution Requirement (% of Payroll)														
Non-GRIP	5.84%	5.63%	12.92%	6.89%	13.35%	16.72%	19.31%	17.30%		14.90%	5.84%	14.51%		
GRIP									6.67%	6.67%	6.67%	6.66%		
Total All Plans	5.84%	5.63%	12.92%	6.89%	13.35%	16.72%	19.31%	17.30%	6.67%	11.88%	6.67%	11.86%		
County UAL Contribution Requirement (% of Payroll)														
Non-GRIP	11.16%	8.11%	-0.55%	7.52%	-2.55%	-3.31%	7.04%	1.04%		2.33%	NA	4.01%		
GRIP									-0.38%	-0.38%	-0.38%	-0.56%		
Total All Plans	11.16%	8.11%	-0.55%	7.52%	-2.55%	-3.31%	7.04%	1.04%	-0.38%	1.31%	NA	2.42%		
Total County Contribution Requirement (% of Payroll)														
Non-GRIP	17.00%	13.74%	12.37%	14.41%	10.80%	13.41%	26.35%	18.34%		17.23%	NA	18.52%		
GRIP									6.29%	6.29%	6.29%	6.10%		
Total All Plans	17.00%	13.74%	12.37%	14.41%	10.80%	13.41%	26.35%	18.34%	6.29%	13.19%	NA	14.27%		

Beginning in fiscal year 2017 for non-GRIP members, outside agencies will make normal cost contributions for their active employees (based on payroll) plus a level dollar amortization payment. The level dollar amortization payment will be made for 20 years (10 years for Strathmore Hall and Washington Suburban Transit Commission) and is not based on payroll. There are 14 years remaining in the 20-year closed amortization period, and 4 years remaining in the 10-year closed amortization period, as of July 1, 2021.

The unfunded liability for the non-Public Safety groups A and H was amortized over a single nine-year closed period and the unfunded liability for the Public Safety groups, Group J and GRIP was amortized over separate 20-year closed periods beginning July 1, 2015. Beginning in fiscal year 2019, Group J is included with the Non-Public Safety groups.



Actuarial Valuation Results

All Plans

	Valuation as of July 1, 2021								July 1, 2020			
	Non-Public Safety			Public Safety				GRIP	Total	% of Payroll	Total	% of Payroll
	Group A	Group H	Group J	Group E	Group F	Group G						
Total All Plans												
Active Members												
Number	246	371	128	455	1,138	1,166	2,710	6,214			6,204	
Average Age	60.1	60.2	48.3	41.6	39.5	39.1	47.7	45.4			45.2	
Average Service	30.5	28.7	14.3	10.9	13.7	12.5	7.6	12.2			12.3	
Total Base Payroll	\$ 27,798,731	\$ 30,580,669	\$ 11,636,643	\$ 34,488,873	\$ 100,877,180	\$ 99,825,446	\$ 201,170,217	\$ 506,377,759			\$ 503,656,510	
Contribution Basis Payroll:												
For Normal Cost	\$ 25,328,337	\$ 27,828,933	\$ 10,917,797	\$ 33,054,592	\$ 97,328,622	\$ 96,410,386	\$ 192,932,189	\$ 483,800,856			\$ 480,772,459	
For Amortization of Unfunded Liability*	19,698,603	23,714,471	11,636,643	34,488,873	100,877,180	99,825,446	201,170,217	491,411,433			487,791,824	
DRSP/DRDP Members												
Number				41	119	65		225			176	
Total Base Payroll				\$ 4,357,478	\$ 12,822,036	\$ 7,598,071		\$ 24,777,585			\$ 19,331,354	
Total Benefits				2,409,670	8,719,663	4,885,388		16,014,721			11,728,709	
Terminated Vested Members												
Number	29	35	4	27	42	22	444	603			529	
Total Benefits (non-GRIP)	\$ 535,568	\$ 303,167	\$ 31,773	\$ 427,676	\$ 450,362	\$ 184,609		\$ 1,933,155			\$ 1,460,344	
Retired Members and Beneficiaries												
Number							7	6,618			6,607	
Total Benefits							\$ 90,776	\$ 269,997,317			\$ 258,118,052	
Total Membership							3,161	13,660			13,516	
Actuarial Accrued Liability												
Active Members	\$ 136,975,084	\$ 130,350,142	\$ 44,484,249	\$ 109,920,436	\$ 406,272,484	\$ 369,956,480	\$ 191,966,192	\$ 1,389,925,067			\$ 1,424,564,557	
DRSP/DRDP Members				35,102,162	130,046,166	73,073,866		238,222,194			175,219,009	
Terminated Vested Members	5,138,544	2,874,584	110,480	3,581,108	2,414,438	758,765	31,906,900	46,784,819			39,029,833	
Retired Members and Beneficiaries	765,606,046	548,415,306	16,093,608	271,191,795	686,768,184	601,176,213	784,083	2,890,035,235			2,789,234,942	
Total	907,719,674	681,640,032	60,688,337	419,795,501	1,225,501,272	1,044,965,324	224,657,175	4,564,967,315			4,428,048,342	
Actuarial Value of Assets	\$ 920,974,234	\$ 706,961,051	\$ 64,877,494	\$ 448,162,323	\$ 1,316,503,347	\$ 1,015,327,528	\$ 237,021,413	\$ 4,709,827,390			\$ 4,393,054,415	
Unfunded Actuarial Accrued Liability	\$ (13,254,560)	\$ (25,321,019)	\$ (4,189,157)	\$ (28,366,822)	\$ (91,002,075)	\$ 29,637,796	\$ (12,364,238)	\$ (144,860,075)			\$ 34,993,927	
Outside Agency Non-GRIP Unfunded Liability	10,959,069	-	-	-	-	-	-	10,959,069			11,507,671	
Net Unfunded Actuarial Accrued Liability	(24,213,629)	(25,321,019)	(4,189,157)	(28,366,822)	(91,002,075)	29,637,796	(12,364,238)	(155,819,144)			23,486,256	
Funded Ratio (Actuarial Value of Assets)	101.5%	103.7%	106.9%	106.8%	107.4%	97.2%	105.5%	103.2%			99.2%	
Annual Gross Normal Cost												
Benefits	\$ 2,718,157	\$ 2,973,472	\$ 2,055,754	\$ 6,390,836	\$ 21,954,438	\$ 24,988,350	\$ 20,253,030	\$ 81,334,037	(16.81%)		\$ 81,947,469	(17.04%)
Expenses of Administration	314,656	299,437	102,188	252,506	933,279	849,854	440,980	3,192,900	(0.66%)		3,148,000	(0.66%)
Total	3,032,813	3,272,909	2,157,942	6,643,342	22,887,717	25,838,204	20,694,010	84,526,937	(17.47%)		85,095,469	(17.70%)
Amortization of Unfunded Liability¹	\$ (8,418,702)	\$ (8,803,727)	\$ (313,658)	\$ (2,056,586)	\$ (6,852,559)	\$ 4,121,610	\$ (1,155,652)	\$ (23,479,274)	(-4.78%)		\$ 6,399,896	(1.31%)
Final Amortization of Unfunded Liability²	\$ (1,494,758)	\$ (1,600,514)	\$ (313,658)	\$ (2,056,586)	\$ (6,852,559)	\$ 4,121,610	\$ (1,155,652)	\$ (9,352,117)	(-1.90%)			
Annual Contribution Requirement:												
County Portion	\$ -	\$ -	\$ 1,105,021	\$ 2,355,094	\$ 9,450,933	\$ 22,781,421	\$ 11,735,609	\$ 47,428,078	(9.83%)		\$ 63,520,020	(13.19%)
Employee Portion	1,538,055	1,672,395	739,263	2,231,662	6,584,225	7,178,393	7,802,749	27,746,742	(5.74%)		27,975,345	(5.82%)
Total	1,538,055	1,672,395	1,844,284	4,586,756	16,035,158	29,959,814	19,538,358	75,174,820	(15.57%)		91,495,365	(19.01%)
Non-Public Safety/Public Safety/GRIP County Portion			\$ 1,105,021			\$ 34,587,448	\$ 11,735,609					
*Excludes Non-GRIP Payroll from Outside Agencies												
Outside Agency UAL Payroll	\$ 1,729,791											

¹ Amortization bases established prior to the July 1, 2015 actuarial valuation were recombined into a single amortization base equal to the total unfunded liability as of July 1, 2015. Beginning July 1, 2015, amortization of the current and future unfunded liability will occur over a single closed period of nine years for Groups A and H and separate closed 20-year amortization periods for the Public Safety groups, Group J and GRIP. Beginning in fiscal year 2019, Group J is included with the Non-Public Safety groups.

² The final amortization payment was adjusted such that the County contribution is not lower than \$0.



Actuarial Valuation Results Outside Agencies

Valuation as of July 1, 2021

Non-GRIP	Assessment and Taxation		CRU 92 Credit		Housing Opportunities Commission	Revenue Authority	Strathmore Hall	Town of Chevy Chase	Washington Suburban Transit Commission	Total Agency (Excluding GRIP)	Total Non-Agency (Excluding GRIP)	Total ERS (Excluding GRIP)
	Circuit Court	Union	District Court	Commission	Authority	Hall	Chevy Chase	Commission	(Excluding GRIP)	(Excluding GRIP)	(Excluding GRIP)	
Actuarial Accrued Liability												
Active Members (Non-GRIP)	\$ -	\$ 743,057	\$ 707,876	\$ -	\$ 8,137,148	\$ 549,112	\$ 1,590,683	\$ -	\$ -	\$ 11,727,876	\$ 1,186,230,999	\$ 1,197,958,875
DRSP/DROP Members	-	-	-	-	-	-	-	-	-	-	238,222,194	238,222,194
Terminated Vested Members	-	-	-	-	336,973	-	-	36,353	-	373,326	14,504,593	14,877,919
Retired Members and Beneficiaries	11,053,120	957,820	3,643,315	1,564,168	38,672,482	2,771,872	2,318,451	982,641	230,396	62,194,264	2,827,056,888	2,889,251,152
Total	\$ 11,053,120	\$ 1,700,877	\$ 4,351,191	\$ 1,564,168	\$ 47,146,603	\$ 3,320,984	\$ 3,909,134	\$ 1,018,994	\$ 230,396	\$ 74,295,466	\$ 4,266,014,674	\$ 4,340,310,140
Actuarial Accrued Liability by Group												
Group A	\$ 11,053,120	\$ 1,700,877	\$ 4,351,191	\$ 1,564,168	\$ 47,146,603	\$ 3,320,984	\$ 3,909,134	\$ 1,018,994	\$ 230,396	\$ 74,295,466		
Remaining Unfunded Actuarial Accrued Liability												
Non-GRIP	\$ 1,924,521	\$ 70,406	\$ 637,641	\$ 337,802	\$ 6,883,101	\$ 838,674	\$ 266,924	\$ -	\$ -	\$ 10,959,069	\$ (143,454,906)	\$ (132,495,837)
Closed Level Dollar Amortization of Unfunded Actuarial Accrued Liability ¹												
Non-GRIP	\$ 210,887	\$ 7,715	\$ 69,872	\$ 37,016	\$ 754,243	\$ 91,901	\$ 74,135	\$ -	\$ -	\$ 1,245,769		
Contribution Basis Payroll:												
For Normal Cost (Non-GRIP)	\$ -	\$ 81,364	\$ 120,157	\$ -	\$ 1,538,986	\$ 95,460	\$ 282,668	\$ -	\$ -	\$ 2,118,635	\$ 288,750,032	290,868,667
Normal Cost Contribution Requirement (% of Payroll)	5.90%	5.90%	5.90%	5.90%	5.90%	5.90%	5.90%	5.90%	5.90%	5.90%		
Estimated Normal Cost \$ Contribution Requirement	\$ -	\$ 4,800	\$ 7,089	\$ -	\$ 90,800	\$ 5,632	\$ 16,677	\$ -	\$ -	\$ 124,999	\$ 43,763,935	\$ 43,888,934
Actual \$ UAL Contribution Requirement	210,887	7,715	69,872	37,016	754,243	91,901	74,135	-	-	1,245,769	(8,196,465)	(6,950,696)
Estimated Total \$ Contribution Requirement	\$ 210,887	\$ 12,515	\$ 76,961	\$ 37,016	\$ 845,043	\$ 97,533	\$ 90,812	\$ -	\$ -	\$ 1,370,768	\$ 35,567,470	\$ 36,938,238

¹ Chevy Chase and Washington Suburban Transit Commission paid off their remaining unfunded liability and therefore have no remaining balance as of July 1, 2018 and July 1, 2021, respectively. For Strathmore Hall, the remaining amortization period is 4 years as of July 1, 2021. For all other agencies, the remaining amortization period is 14 years as of July 1, 2021.

Beginning in fiscal year 2017 for non-GRIP members, outside agencies will make normal cost contributions for their active employees (based on payroll) plus the level dollar amortization payment shown above. The level dollar amortization payment will be made for 20 years (10 years for Strathmore Hall and Washington Suburban Transit Commission) and is not based on payroll. Contributions for GRIP members will continue to be made based on the contribution rates determined in the actuarial valuations and actual payroll. Contribution basis payroll for normal cost that is shown is the fiscal year 2022 amount. Actual projected payroll for non-GRIP for fiscal year 2023 may be lower than the amount shown (or \$0 if there are no remaining active members).



Actuarial Valuation Results Outside Agencies

Valuation as of July 1, 2021

GRIP	Valuation as of July 1, 2021										Total Agency (GRIP)	Total Non-Agency (GRIP)	Total ERS (GRIP)
	Assessment and Taxation	Circuit Court	CRU 92 Credit Union	District Court	Housing Opportunities Commission	Revenue Authority	Strathmore Hall	Town of Chevy Chase	Washington Suburban Transit Commission				
Actuarial Accrued Liability													
Active Members (GRIP)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 7,705,480	\$ 94,855	\$ 374,678	\$ 277,478	\$ -	\$ 8,452,491	\$ 183,513,701	\$ 191,966,192
Terminated Vested Members	-	-	-	-	-	2,494,413	305,476	402,435	-	-	3,202,324	28,704,576	31,906,900
Retired Members and Beneficiaries	-	-	-	-	-	-	-	-	-	-	-	784,083	784,083
Total	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 10,199,893	\$ 400,331	\$ 777,113	\$ 277,478	\$ -	\$ 11,654,815	\$ 213,002,360	\$ 224,657,175
Unfunded Actuarial Accrued Liability (GRIP)	\$ -	\$ -	\$ -	\$ -	\$ -	(561,362)	(22,033)	(42,769)	(15,271)	\$ -	(641,435)	(11,722,803)	(12,364,238)
Contribution Basis Payroll:													
For Normal Cost (GRIP)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 7,858,958	\$ 300,574	\$ 476,267	\$ 36,117	\$ -	\$ 8,671,916	\$ 184,260,273	\$ 192,932,189
For Amortization of Unfunded Liability (GRIP)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,192,205	\$ 309,826	\$ 490,425	\$ 36,674	\$ -	\$ 9,029,129	\$ 192,141,088	\$ 201,170,217
Normal Cost Contribution Requirement (% of Payroll)	6.69%	6.69%	6.69%	6.69%	6.69%	6.69%	6.69%	6.69%	6.69%	6.69%			
UAL Contribution Requirement (% of Payroll)	-0.57%	-0.57%	-0.57%	-0.57%	-0.57%	-0.57%	-0.57%	-0.57%	-0.57%	-0.57%			
Estimated Normal Cost \$ Contribution Requirement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 525,764	\$ 20,108	\$ 31,862	\$ 2,416	\$ -	\$ 580,151	\$ 12,311,110	\$ 12,891,261
Estimated \$ UAL Contribution Requirement	-	-	-	-	-	(46,696)	(1,766)	(2,795)	(209)	-	(51,466)	(1,104,186)	(1,155,652)
Estimated Total \$ Contribution Requirement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 479,069	\$ 18,342	\$ 29,067	\$ 2,207	\$ -	\$ 528,685	\$ 11,206,924	\$ 11,735,609
Total Non-GRIP and GRIP											Total Agency	Total Non-Agency	Total ERS
Fixed Closed Level Dollar Amortization Payment	\$ 210,887	\$ 7,715	\$ 69,872	\$ 37,016	\$ 754,243	\$ 91,901	\$ 74,135	\$ -	\$ -	\$ -	\$ 1,245,769		
Estimated \$ Contribution for Payroll Based Contribution	-	4,800	7,089	-	569,869	23,975	45,744	2,207	-	-	653,685		
Total Estimated Contribution	\$ 210,887	\$ 12,515	\$ 76,961	\$ 37,016	\$ 1,324,112	\$ 115,876	\$ 119,879	\$ 2,207	\$ -	\$ -	\$ 1,899,454	\$ 46,774,393	\$ 48,673,847
Unfunded Actuarial Accrued Liability (Based on Actuarial Value of Assets)													
Non-GRIP	\$ 1,924,521	\$ 70,406	\$ 637,641	\$ 337,802	\$ 6,883,101	\$ 838,674	\$ 266,924	\$ -	\$ -	\$ -	\$ 10,959,069	\$ (143,454,906)	\$ (132,495,837)
GRIP	-	-	-	-	(561,362)	(22,033)	(42,769)	(15,271)	-	-	(641,435)	(11,722,803)	(12,364,238)
Total	\$ 1,924,521	\$ 70,406	\$ 637,641	\$ 337,802	\$ 6,321,739	\$ 816,641	\$ 224,155	\$ (15,271)	\$ -	\$ -	\$ 10,317,634	\$ (155,177,709)	\$ (144,860,075)

Beginning in fiscal year 2017 for non-GRIP members, outside agencies will make normal cost contributions for their active employees (based on payroll) plus the level dollar amortization payment shown above. The level dollar amortization payment will be made for 20 years (10 years for Strathmore Hall and Washington Suburban Transit Commission) and is not based on payroll. Contributions for GRIP members will continue to be made based on the contribution rates determined in the actuarial valuations and actual payroll. Contribution basis payroll for normal cost that is shown is the fiscal year 2022 amount. Actual projected payroll for non-GRIP for fiscal year 2023 may be lower than the amount shown (or \$0 if there are no remaining active members).



Actuarial Valuation Results

Guaranteed Retirement Income Plan (GRIP)

	Valuation as of July 1, 2021						July 1, 2020		
	Agency					Total GRIP	Total		
	CC	CM	CN	CP	CZ				
Total All Plans									
Active Members									
Number	1	2,019	683	2	5	2,710		2,521	
Average Age	63.3	46.9	50.1	54.9	60.4	47.7		47.5	
Average Service	5.5	7.1	9.0	15.2	10.1	7.6		7.4	
Total Base Payroll	\$ 41,366	\$ 130,282,451	\$ 69,889,420	\$ 171,135	\$ 785,844	\$ 201,170,217		\$ 183,697,027	
Contribution Basis Payroll:									
For Normal Cost	\$ 39,246	\$ 124,894,159	\$ 67,133,890	\$ 158,027	\$ 706,867	\$ 192,932,189		\$ 176,052,318	
For Amortization of Unfunded Liability	41,366	130,282,451	69,889,420	171,135	785,844	201,170,217		183,697,027	
Terminated Members									
Number	2	280	157	3	2	444		378	
Retired Members and Beneficiaries									
Number		5	2			7		5	
Total Benefits		42,350	48,426			90,776		70,130	
Total Membership	3	2,304	842	5	7	3,161		2,904	
Actuarial Accrued Liability									
Active Members	\$ 24,643	\$ 108,361,711	\$ 82,239,525	\$ 345,293	\$ 995,020	\$ 191,966,192		\$ 168,910,709	
Terminated Vested Members	128,568	13,016,710	16,511,610	1,664,570	585,441	31,906,900		26,780,725	
Retired Members and Beneficiaries	-	416,888	367,195	-	-	784,083		595,741	
Total	153,211	121,795,309	99,118,330	2,009,863	1,580,461	224,657,175		196,287,175	
Actuarial Value of Assets	\$ 161,643	\$ 128,498,439	\$ 104,573,409	\$ 2,120,478	\$ 1,667,443	\$ 237,021,413		\$ 203,010,320	
Unfunded Actuarial Accrued Liability	\$ (8,432)	\$ (6,703,130)	\$ (5,455,079)	\$ (110,615)	\$ (86,982)	\$ (12,364,238)		\$ (6,723,145)	
Funded Ratio (Actuarial Value of Assets)	105.5%	105.5%	105.5%	105.5%	105.5%	105.5%		103.4%	
Annual Gross Normal Cost									
Benefits	\$ 4,183	\$ 13,069,201	\$ 7,087,479	\$ 17,697	\$ 74,470	\$ 20,253,030	(10.50%)	\$ 18,492,646	(10.50%)
Expenses of Administration	301	239,072	194,560	3,945	3,102	440,980	(0.23%)	373,259	(0.22%)
Total	4,484	13,308,273	7,282,039	21,642	77,572	20,694,010	(10.73%)	18,865,905	(10.72%)
Amortization of Unfunded Liability	\$ (788)	\$ (626,523)	\$ (509,872)	\$ (10,339)	\$ (8,130)	\$ (1,155,652)	-(0.57%)	\$ (705,202)	-(0.38%)
Annual Contribution Requirement:									
County Portion	\$ 2,126	\$ 7,685,984	\$ 4,001,485	\$ 6,562	\$ 39,452	\$ 11,735,609	(6.12%)	\$ 11,022,938	(6.29%)
Employee Portion	1,570	4,995,766	2,770,682	4,741	29,990	7,802,749	(4.04%)	7,137,765	(4.05%)
Total	3,696	12,681,750	6,772,167	11,303	69,442	19,538,358	(10.16%)	18,160,703	(10.34%)
Non-Public Safety County Portion						\$ 11,729,047	(6.11%)	\$ 11,013,308	(6.28%)
Public Safety County Portion (Agency CP) ¹						\$ 6,562	(4.65%)	\$ 9,630	(6.53%)

¹Amortization of unfunded liability contribution rate decreased from -3.95% from the last valuation to -6.04% in the current valuation.

The Public Safety County Portion based on the recommended method is 7.86% (8.20% + 0.23% - 0.57%).



Actuarial Valuation Results

Amortization of Unfunded Actuarial Accrued Liability and Amortization Payments By Group

Closed Groups

Base Year	Description	Unfunded Liability Base ¹			Remaining Financing Period	Amortization Factor	Amortization Payment		
		Group A	Group H	Total			Group A	Group H	Total
2015	Pre FY 2015 Retirement Incentive	\$ 4,402,655	\$ 6,035,519	\$ 10,438,174	3 yrs.	2.876171	\$ 1,530,735	\$ 2,098,456	\$ 3,629,191
2015	Pre FY 2015 Plan Experience	35,706,511	39,110,879	74,817,390	3	2.876171	12,414,600	13,598,246	26,012,846
2015	Pre FY 2015 Plan Changes	13,881,146	19,056,450	32,937,596	3	2.876171	4,826,259	6,625,632	11,451,891
2015	Pre FY 2015 Cost Method Changes	3,328,884	2,584,898	5,913,782	3	2.876171	1,157,401	898,729	2,056,130
2015	FY 2015 Plan Experience	(24,299,502)	(14,252,361)	(38,551,863)	3	2.876171	(8,448,560)	(4,955,325)	(13,403,885)
2015	FY 2015 Assumption and Method Changes	12,989,387	8,338,709	21,328,096	3	2.876171	4,516,208	2,899,240	7,415,448
2015	FY 2015 Plan Changes	-	-	-	3	2.876171	-	-	-
2016	FY 2016 Plan Experience	(360,563)	(3,782,771)	(4,143,334)	3	2.876171	(125,362)	(1,315,211)	(1,440,573)
2017	FY 2017 Plan Experience	(8,171,295)	(11,470,537)	(19,641,832)	3	2.876171	(2,841,032)	(3,988,128)	(6,829,160)
2018	FY 2018 Plan Experience	(2,495,323)	(6,051,533)	(8,546,856)	3	2.876171	(867,585)	(2,104,024)	(2,971,609)
2019	FY 2019 Plan Experience	1,611,973	(7,049,077)	(5,437,104)	3	2.876171	560,458	(2,450,855)	(1,890,397)
2019	FY 2019 Assumption and Method Changes	(22,605,994)	(16,421,554)	(39,027,548)	3	2.876171	(7,859,753)	(5,709,520)	(13,569,273)
2020	FY 2020 Plan Experience	(6,592,745)	(9,773,840)	(16,366,585)	3	2.876171	(2,292,195)	(3,398,213)	(5,690,408)
2021	FY 2021 Plan Experience	(31,608,763)	(31,645,801)	(63,254,564)	3	2.876171	(10,989,876)	(11,002,754)	(21,992,630)
Unfunded Liability		\$ (24,213,629)	\$ (25,321,019)	\$ (49,534,648)	3.0 yrs.	2.876171	\$ (8,418,702)	\$ (8,803,727)	\$ (17,222,429)

¹ Unfunded liability for Group A excludes Outside Agency Non-GRIP unfunded liability of \$10,959,069.



Actuarial Valuation Results

Amortization of Unfunded Actuarial Accrued Liability and Amortization Payments By Group

Open Groups

Base Year	Description	Unfunded Liability Base					Remaining Financing Period	Amortization Factor	Amortization Payment				
		Group J	Group E	Group F	Group G	Total			Group J	Group E	Group F	Group G	Total
2015	Pre FY 2015 Retirement Incentive	\$ -	\$ 994,289	\$ -	\$ -	\$ 994,289	14 yrs.	10.760888	\$ -	\$ 92,398	\$ -	\$ -	\$ 92,398
2015	Pre FY 2015 Plan Experience	-	36,181,502	106,298,140	107,805,747	250,285,389	14	10.760888	-	3,362,316	9,878,194	10,018,295	23,258,805
2015	Pre FY 2015 Plan Changes	-	3,232,082	(1,561,135)	66,907,696	68,578,643	14	10.760888	-	300,355	(145,075)	6,217,674	6,372,954
2015	Pre FY 2015 Cost Method Changes	-	198,635	335,314	1,267,951	1,801,900	14	10.760888	-	18,459	31,160	117,830	167,449
2015	FY 2015 Plan Experience	-	(21,745,367)	(56,673,653)	(38,459,055)	(116,878,075)	14	10.760888	-	(2,020,778)	(5,266,633)	(3,573,967)	(10,861,378)
2015	FY 2015 Assumption and Method Changes	-	(7,649,998)	(17,491,320)	(7,753,315)	(32,894,633)	14	10.760888	-	(710,908)	(1,625,453)	(720,509)	(3,056,870)
2015	FY 2015 Plan Changes	-	4,324,305	-	-	4,324,305	14	10.760888	-	401,854	-	-	401,854
2016	FY 2016 Plan Experience	-	(7,171,824)	(24,045,028)	(20,081,720)	(51,298,572)	15	11.310432	-	(634,089)	(2,125,916)	(1,775,504)	(4,535,509)
2017	FY 2017 Plan Experience	(204,367)	(10,583,887)	(22,493,654)	(20,831,105)	(54,113,013)	16	11.836972	(17,265)	(894,138)	(1,900,288)	(1,759,834)	(4,571,525)
2018	FY 2018 Plan Experience	(399,034)	(5,388,998)	(13,962,500)	1,110,457	(18,640,075)	17	12.341471	(32,333)	(436,658)	(1,131,348)	89,978	(1,510,361)
2019	FY 2019 Plan Experience	(267,752)	56,154	(6,222,102)	(9,709,467)	(16,143,167)	18	12.824851	(20,878)	4,379	(485,160)	(757,082)	(1,258,741)
2019	FY 2019 Assumption and Method Changes	(610,959)	(4,057,447)	(12,742,872)	(10,984,782)	(28,396,060)	18	12.824851	(47,639)	(316,374)	(993,608)	(856,523)	(2,214,144)
2020	FY 2020 Plan Experience	655,830	(1,293,009)	1,008,645	3,124,811	3,496,277	19	13.287997	49,355	(97,307)	75,906	235,160	263,114
2021	FY 2021 Plan Experience	(3,362,875)	(15,463,259)	(43,451,910)	(42,759,422)	(105,037,466)	20	13.731755	(244,898)	(1,126,095)	(3,164,338)	(3,113,908)	(7,649,239)
Unfunded Liability		\$ (4,189,157)	\$ (28,366,822)	\$ (91,002,075)	\$ 29,637,796	\$ (93,920,258)	34.4 yrs.	18.411430	\$ (313,658)	\$ (2,056,586)	\$ (6,852,559)	\$ 4,121,610	\$ (5,101,193)



Actuarial Valuation Results

Amortization of Unfunded Actuarial Accrued Liability and Amortization Payments By Group

GRIP

Base Year	Description	<u>Unfunded Liability Base</u> GRIP	Remaining Financing Period	Amortization Factor	Amortization Payment
2015	Pre FY 2015 Retirement Incentive	\$ -	14 yrs.	10.760888	\$ -
2015	Pre FY 2015 Plan Experience	(6,885,939)	14	10.760888	(639,904)
2015	Pre FY 2015 Plan Changes	(2,028,314)	14	10.760888	(188,489)
2015	Pre FY 2015 Cost Method Changes	2,140,008	14	10.760888	198,869
2015	FY 2015 Plan Experience	(3,267,518)	14	10.760888	(303,648)
2015	FY 2015 Assumption and Method Changes	(5,408,464)	14	10.760888	(502,604)
2015	FY 2015 Plan Changes	-	14	10.760888	-
2016	FY 2016 Plan Experience	(223,095)	15	11.310432	(19,725)
2017	FY 2017 Plan Experience	2,361,168	16	11.836972	199,474
2018	FY 2018 Plan Experience	1,398,428	17	12.341471	113,311
2019	FY 2019 Plan Experience	2,201,991	18	12.824851	171,697
2019	FY 2019 Assumption and Method Changes	238,148	18	12.824851	18,569
2020	FY 2020 Plan Experience	3,004,299	19	13.287997	226,091
2021	FY 2021 Plan Experience	(5,894,950)	20	13.731755	(429,293)
Unfunded Liability		\$ (12,364,238)	13.9 yrs.	10.698928	\$ (1,155,652)



Actuarial Valuation Results

Amortization of Unfunded Actuarial Accrued Liability and Amortization Payments By Group

Total

Base Year	Description	Unfunded Liability Base ¹							GRIP	Total
		Closed Groups		Open Groups						
		Group A	Group H	Group J	Group E	Group F	Group G			
2015	Pre FY 2015 Retirement Incentive	\$ 4,402,655	\$ 6,035,519	\$ -	\$ 994,289	\$ -	\$ -	\$ -	\$ 11,432,463	
2015	Pre FY 2015 Plan Experience	35,706,511	39,110,879	-	36,181,502	106,298,140	107,805,747	(6,885,939)	318,216,840	
2015	Pre FY 2015 Plan Changes	13,881,146	19,056,450	-	3,232,082	(1,561,135)	66,907,696	(2,028,314)	99,487,925	
2015	Pre FY 2015 Cost Method Changes	3,328,884	2,584,898	-	198,635	335,314	1,267,951	2,140,008	9,855,690	
2015	FY 2015 Plan Experience	(24,299,502)	(14,252,361)	-	(21,745,367)	(56,673,653)	(38,459,055)	(3,267,518)	(158,697,456)	
2015	FY 2015 Assumption and Method Changes	12,989,387	8,338,709	-	(7,649,998)	(17,491,320)	(7,753,315)	(5,408,464)	(16,975,001)	
2015	FY 2015 Plan Changes	-	-	-	4,324,305	-	-	-	4,324,305	
2016	FY 2016 Plan Experience	(360,563)	(3,782,771)	-	(7,171,824)	(24,045,028)	(20,081,720)	(223,095)	(55,665,001)	
2017	FY 2017 Plan Experience	(8,171,295)	(11,470,537)	(204,367)	(10,583,887)	(22,493,654)	(20,831,105)	2,361,168	(71,393,677)	
2018	FY 2018 Plan Experience	(2,495,323)	(6,051,533)	(399,034)	(5,388,998)	(13,962,500)	1,110,457	1,398,428	(25,788,503)	
2019	FY 2019 Plan Experience	1,611,973	(7,049,077)	(267,752)	56,154	(6,222,102)	(9,709,467)	2,201,991	(19,378,280)	
2019	FY 2019 Assumption and Method Changes	(22,605,994)	(16,421,554)	(610,959)	(4,057,447)	(12,742,872)	(10,984,782)	238,148	(67,185,460)	
2020	FY 2020 Plan Experience	(6,592,745)	(9,773,840)	655,830	(1,293,009)	1,008,645	3,124,811	3,004,299	(9,866,009)	
2021	FY 2021 Plan Experience	(31,608,763)	(31,645,801)	(3,362,875)	(15,463,259)	(43,451,910)	(42,759,422)	(5,894,950)	(174,186,980)	
Unfunded Liability		\$ (24,213,629)	\$ (25,321,019)	\$ (4,189,157)	\$ (28,366,822)	\$ (91,002,075)	\$ 29,637,796	\$ (12,364,238)	\$ (155,819,144)	

Base Year	Description	Remaining Financing Period	Amortization Factor	Amortization of Unfunded Liability Base							GRIP	Total
				Closed Groups		Open Groups						
				Group A	Group H	Group J	Group E	Group F	Group G			
2015	Pre FY 2015 Retirement Incentive	3.2 yrs.	3.071931	\$ 1,530,735	\$ 2,098,456	\$ -	\$ 92,398	\$ -	\$ -	\$ -	\$ 3,721,589	
2015	Pre FY 2015 Plan Experience	7.5	6.543397	12,414,600	13,598,246	-	3,362,316	9,878,194	10,018,295	(639,904)	48,631,747	
2015	Pre FY 2015 Plan Changes	6.3	5.641070	4,826,259	6,625,632	-	300,355	(145,075)	6,217,674	(188,489)	17,636,356	
2015	Pre FY 2015 Cost Method Changes	4.4	4.068484	1,157,401	898,729	-	18,459	31,160	117,830	198,869	2,422,448	
2015	FY 2015 Plan Experience	7.4	6.459279	(8,448,560)	(4,955,325)	-	(2,020,778)	(5,266,633)	(3,573,967)	(303,648)	(24,568,911)	
2015	FY 2015 Assumption/Method Changes	(4.0)	(4.402260)	4,516,208	2,899,240	-	(710,908)	(1,625,453)	(720,509)	(502,604)	3,855,974	
2015	FY 2015 Plan Changes	14.0	10.760886	-	-	-	401,854	-	-	-	401,854	
2016	FY 2016 Plan Experience	11.5	9.283988	(125,362)	(1,315,211)	-	(634,089)	(2,125,916)	(1,775,504)	(19,725)	(5,995,807)	
2017	FY 2017 Plan Experience	7.3	6.373746	(2,841,032)	(3,988,128)	(17,265)	(894,138)	(1,900,288)	(1,759,834)	199,474	(11,201,211)	
2018	FY 2018 Plan Experience	6.6	5.903071	(867,585)	(2,104,024)	(32,333)	(436,658)	(1,131,348)	89,978	113,311	(4,368,659)	
2019	FY 2019 Plan Experience	7.4	6.508367	560,458	(2,450,855)	(20,878)	4,379	(485,160)	(757,082)	171,697	(2,977,441)	
2019	FY 2019 Assumption and Method Changes	4.6	4.261726	(7,859,753)	(5,709,520)	(47,639)	(316,374)	(993,608)	(856,523)	18,569	(15,764,848)	
2020	FY 2020 Plan Experience	1.9	1.896871	(2,292,195)	(3,398,213)	49,355	(97,307)	75,906	235,160	226,091	(5,201,203)	
2021	FY 2021 Plan Experience	6.5	5.792492	(10,989,876)	(11,002,754)	(244,898)	(1,126,095)	(3,164,338)	(3,113,908)	(429,293)	(30,071,162)	
Amortization Payments		7.6 yrs.	6.636455	\$ (8,418,702)	\$ (8,803,727)	\$ (313,658)	\$ (2,056,586)	\$ (6,852,559)	\$ 4,121,610	\$ (1,155,652)	\$ (23,479,274)	

¹ Unfunded liability for Group A excludes Outside Agency Non-GRIP unfunded liability of \$10,959,069.



Actuarial Valuation Results

Gain/Loss Analysis

	Non-Public Safety	Public Safety	GRIP	Total
Unfunded liability at previous valuation	\$ 28,066,256	\$ 13,650,815	\$ (6,723,145)	\$ 34,993,927
Expected unfunded liability at current valuation				
Normal cost for plan year	9,178,873	57,050,691	18,865,905	85,095,469
Interest on unfunded liability and normal cost	2,442,954	3,124,536	190,446	5,757,936
Contributions with interest to current valuation date ¹	<u>14,423,704</u>	<u>61,882,550</u>	<u>18,802,494</u>	<u>95,108,749</u>
Total expected change in unfunded liability at current valuation	(2,801,877)	(1,707,323)	253,857	(4,255,344)
Total expected unfunded liability at current valuation	25,264,379	11,943,492	(6,469,288)	30,738,583
Change due to:				
Recognition of asset (gains)/losses	(62,971,427)	(101,561,949)	(7,916,077)	(172,449,453)
Salary increases	(7,530,603)	(14,960,571)	-	(22,491,174)
COLA increases	15,310,960	19,219,132	-	34,530,092
Amount and timing of contributions ²	(1,432,076)	(317,096)	202,335	(1,546,837)
Demographic experience and other	(11,405,969)	(4,054,109)	1,818,792	(13,641,286)
Change in actuarial assumptions	-	-	-	-
Plan improvements	-	-	-	-
Measurement improvements	-	-	-	-
Total change	(68,029,115)	(101,674,593)	(5,894,950)	(175,598,658)
Unfunded liability at current valuation	\$ (42,764,736)	\$ (89,731,101)	\$ (12,364,238)	\$ (144,860,075)

	County Contribution			Funded Status
	Non-Public Safety	Public Safety	GRIP	Total
FY 2022 County Contribution/July 1, 2020 Funded Ratio	14.41%	18.34%	6.29%	99.2%
FY 2023 County Contribution/Expected July 1, 2021 Funded Ratio	15.22%	18.41%	6.31%	99.5%
Change due to:				
Recognition of asset (gains)/losses	-16.08%	-3.14%	-0.29%	3.8%
Salary increases	-4.52%	-0.46%	-0.01%	0.5%
COLA increases	9.67%	0.60%	0.00%	-0.8%
Amount and timing of contributions	-0.90%	-0.01%	0.01%	0.0%
Demographic experience and other	-1.75%	-0.08%	0.10%	0.2%
Measurement improvements	0.00%	0.00%	0.00%	0.0%
Plan improvements	0.00%	0.00%	0.00%	0.0%
Change in assumptions and amortization period	0.00%	0.00%	0.00%	0.0%
Total change	-13.58%	-3.09%	-0.19%	3.7%
FY 2023 County Contribution/July 1, 2021 Funded Ratio	1.64%	15.32%	6.12%	103.2%

Demographic Experience and Other includes changes due to retirement, mortality, disability and termination experience that varied from the actuarial assumptions, and data changes. Beginning in fiscal year 2019, Group J is included with the Non-Public Safety groups.

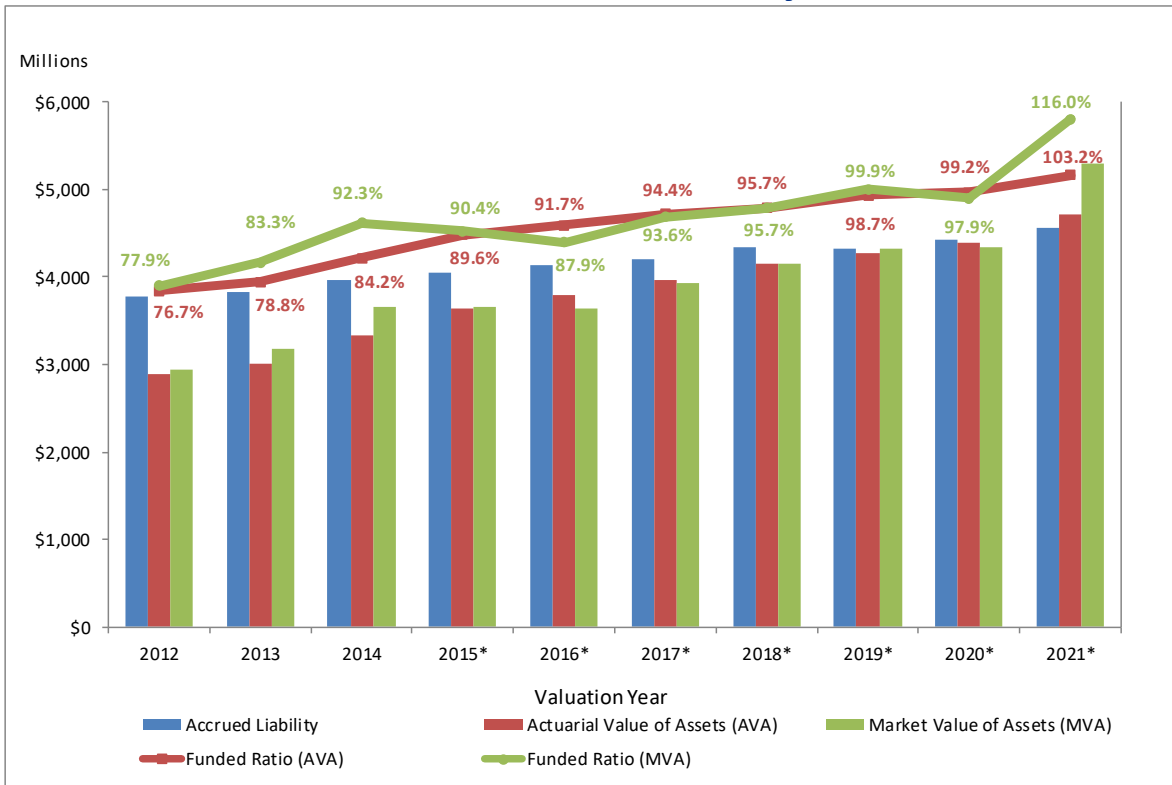
¹ Based on the normal cost and amortization payments from the actuarial valuation as of July 1, 2020.

² Reflects differences in unfunded liability contributions between when the contribution rate was calculated (actuarial valuation date) and when the contributions were made (fiscal year).

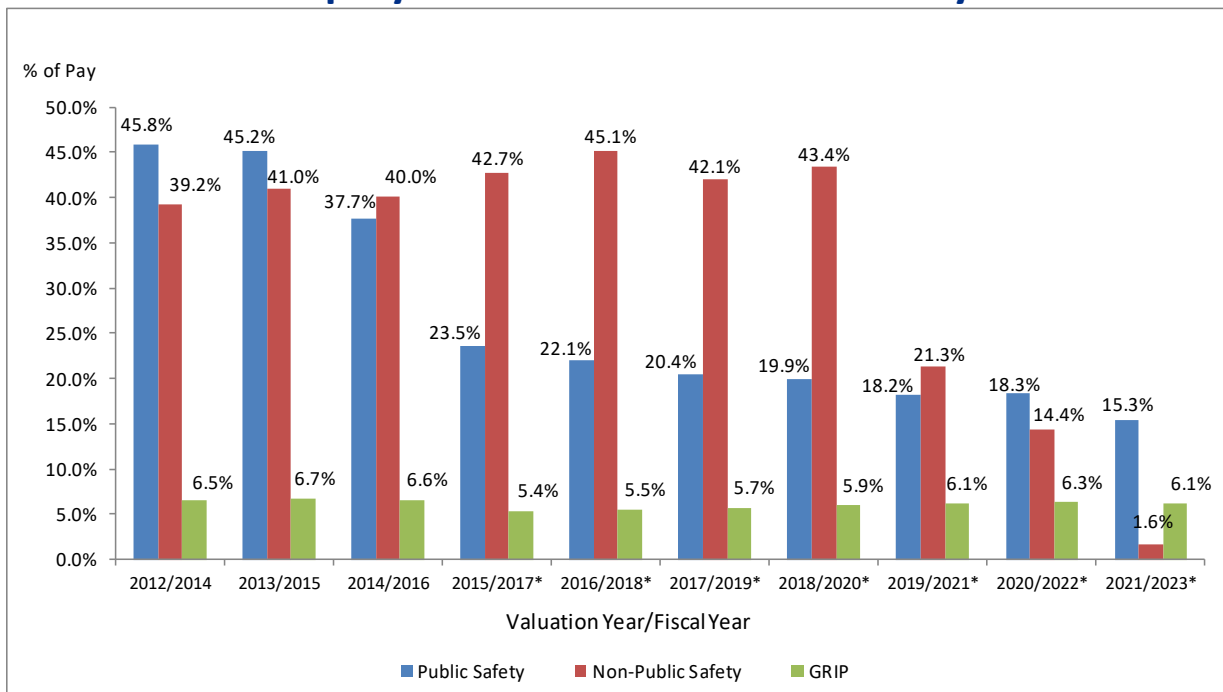


Historical Trends of Funded Ratio and Employer Contributions

Funded Ratio History



Employer Contribution Rate History

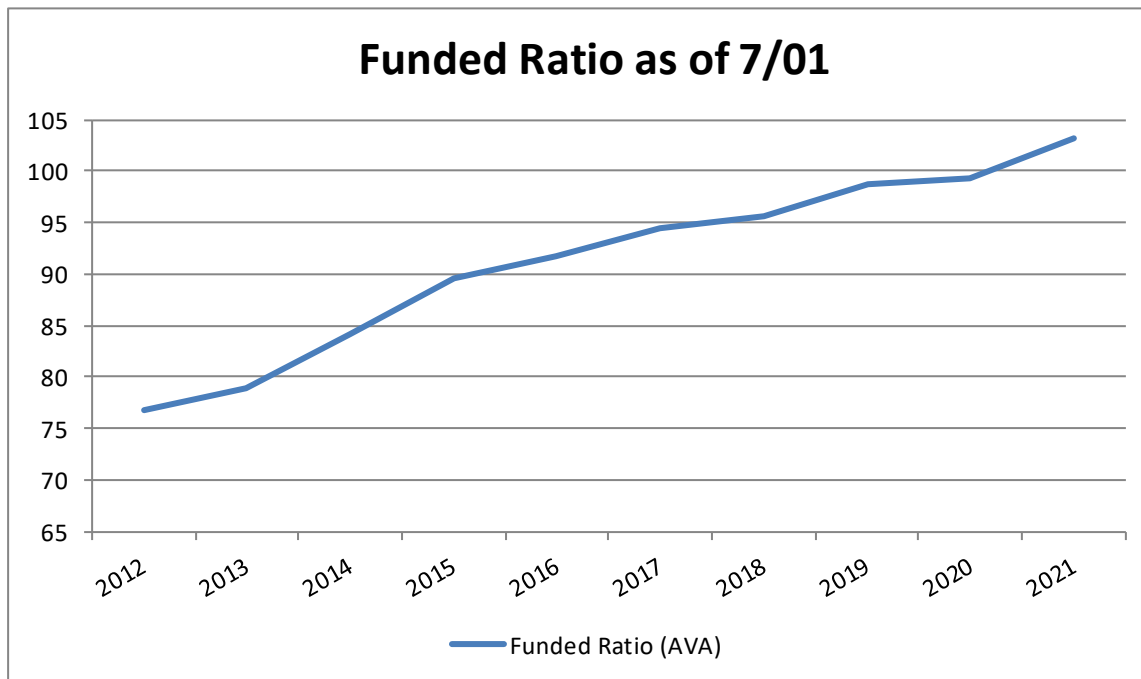


* Results beginning with the 2015 valuation (FY 2017) include changes to amortization periods used to finance the unfunded liability and changes to the actuarial assumptions used in the valuation, based on the key findings from an experience review of the System for the period from July 1, 2009 to July 1, 2014.



Funded Ratio History

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (AVA) (a / b)
7/1/2012	\$2,891,435,563	\$3,768,745,962	\$877,310,399	76.7 %
7/1/2013	3,012,547,244	3,821,380,732	808,833,488	78.8
7/1/2014	3,333,484,724	3,958,929,718	625,444,994	84.2
7/1/2015	3,630,075,610	4,050,736,852	420,661,242	89.6
7/1/2016	3,798,555,275	4,141,060,968	342,505,693	91.7
7/1/2017	3,968,497,692	4,202,633,142	234,135,450	94.4
7/1/2018	4,149,354,330	4,334,296,798	184,942,468	95.7
7/1/2019	4,261,996,413	4,320,161,072	58,164,659	98.7
7/1/2020	4,393,054,415	4,428,048,342	34,993,927	99.2
7/1/2021	4,709,827,390	4,564,967,315	(144,860,075)	103.2



Actuarial Valuation Results Solvency Test

Valuation Date 6/30	Total Actuarial Accrued Liability	(1)	(2)	(3)	Actuarial Value of Assets	Portion (%) of Present Value Covered		
		Active Member Contributions	Retirees, Term Vested and Beneficiaries	Active Members (Employer Financed Portion)		By Assets		
						(1)	(2)	(3)
2012	\$3,768,745,962	\$210,537,737	\$ 2,465,714,392	\$ 1,092,493,833	\$2,891,435,563	100%	100%	20%
2013	3,821,380,732	248,331,006	2,526,844,154	1,046,205,572	3,012,547,244	100%	100%	23%
2014	3,958,929,718	265,055,643	2,585,446,584	1,108,427,491	3,333,484,724	100%	100%	44%
2015	4,050,736,852	280,135,577	2,698,040,722	1,072,560,553	3,630,075,610	100%	100%	61%
2016	4,141,060,968	297,715,372	2,747,575,831	1,095,769,765	3,798,555,275	100%	100%	69%
2017	4,202,633,142	314,707,102	2,789,167,599	1,098,758,441	3,968,497,692	100%	100%	79%
2018	4,334,296,798	327,611,097	2,900,824,622	1,105,861,079	4,149,354,330	100%	100%	83%
2019	4,320,161,072	333,645,308	2,927,345,196	1,059,170,568	4,261,996,413	100%	100%	95%
2020	4,428,048,342	350,094,770	3,003,483,784	1,074,469,788	4,393,054,415	100%	100%	97%
2021	4,564,967,315	357,460,046	3,175,042,247	1,032,465,022	4,709,827,390	100%	100%	100%

DRSP and DROP member liability included in item (2) with retirees beginning in 2012.



Statement of Fiduciary Net Position

Assets	Fiscal Year Ending	
	June 30, 2020	June 30, 2021
Equity in County's pooled cash and investments	\$2,492,345	\$1,245,201
Investments:		
Government and agency obligations	528,089,716	80,378,670
Municipal/Provincial obligations	21,417,231	1,771,786
Asset-backed securities	899,042	0
Corporate bonds	685,718,740	491,794,356
Collateralized mortgage obligations	-	-
Commercial mortgage-backed securities	1,458,954	1,519,351
Common and preferred stock	1,531,092,203	1,716,310,988
Mutual and commingled funds	563,197,846	1,626,148,260
Short-term investments	128,855,407	162,518,924
Cash collateral received under securities lending agreements	156,070,467	155,728,739
Private real assets	248,857,751	343,846,799
Private equity/debt	614,388,944	864,349,703
Total Investments	4,480,046,301	5,444,367,576
Dividend, interest and other receivables	13,745,051	12,279,607
Contributions receivable	7,970,737	7,006,025
Net capital assets	-	-
Total assets	4,504,254,434	5,464,898,409
Liabilities		
Payable for collateral received under securities lending agreements	156,070,467	155,728,739
Benefit payable and other liabilities	14,682,446	13,197,148
Total liabilities	170,752,913	168,925,887
Net position restricted for pensions	\$ 4,333,501,521	\$ 5,295,972,522



Statement of Changes in Fiduciary Net Position Total Employees' Retirement System (ERS)

	Fiscal Year Ending	
	June 30, 2020	June 30, 2021
Additions:		
Contributions:		
Employer	\$ 87,198,736	\$ 70,740,597
Members	30,781,032	30,848,249
Total contributions	117,979,768	101,588,846
Total income from investment activities	191,277,121	1,166,428,940
Less investment expenses	19,230,564	26,207,145
Net income from investment activities	172,046,557	1,140,221,795
Income from securities lending	2,768,203	927,664
Less securities lending expenses	1,446,670	98,580
Net income from securities lending	1,321,533	829,084
Total additions	291,347,858	1,242,639,725
Deductions:		
Retiree benefits	197,346,814	203,252,726
Disability benefits	54,100,956	53,924,544
Survivor benefits	10,625,975	10,243,634
Refunds and distributions	9,349,667	9,748,805
Administrative expenses	3,059,212	2,999,015
Total deductions	274,482,624	280,168,724
Net increase in net position	16,865,234	962,471,001
Net position restricted for pensions		
Beginning of year	4,316,636,287	4,333,501,521
End of year	\$4,333,501,521	\$5,295,972,522



Statement of Changes in Fiduciary Net Position Allocation between GRIP and Non-GRIP Assets

	Fiscal Year Ending June 30, 2020		Fiscal Year Ending June 30, 2021	
	Total	Non-GRIP	GRIP	Total
Additions:				
Contributions:				
Employer ¹	\$ 87,198,736	\$ 58,835,528	\$ 11,905,069	\$ 70,740,597
Members	30,781,032	22,916,715	7,931,534	30,848,249
Total contributions	117,979,768	81,752,243	19,836,603	101,588,846
Net investment income	173,368,090	1,085,889,180	55,161,699	1,141,050,879
Total additions	291,347,858	1,167,641,423	74,998,302	1,242,639,725
Deductions:				
Benefit Payments and distributions	271,423,412	268,189,593	8,980,116	277,169,709
Administrative expenses	3,059,212	2,625,756	373,259	2,999,015
Total deductions	274,482,624	270,815,349	9,353,375	280,168,724
Net increase in net position	16,865,234	896,826,074	65,644,927	962,471,001
Net position restricted for pensions				
Beginning of year	4,316,636,287	4,133,565,673	199,935,848	4,333,501,521
End of year	\$4,333,501,521	\$5,030,391,747	\$ 265,580,775	\$5,295,972,522

Net investment income is allocated using the estimated market value rate of return on total plan assets during the fiscal year (4.09% and 26.88% for fiscal years ending June 30, 2020, and June 30, 2021, respectively) and net non-investment cash flow and the market value of assets from the prior fiscal year end for the respective GRIP and Non-GRIP groups.

¹ GRIP employer contributions are based on the County actuarial contribution rate of 6.10 percent of pay for fiscal year 2021 compared to the employer contribution rates credited to member GRIP accounts (8 percent of pay, 10 percent of pay for public safety employees) and the employer dollar amount contributed to member GRIP accounts of \$15,613,205.



Development of Actuarial Value of Assets (Total ERS)

Fiscal Year Ending	2020	2021	2022	2023	2024	2025
Beginning of Year:						
(1) Market Value of Assets	\$ 4,316,636,287	\$ 4,333,501,521				
(2) Actuarial Value of Assets	4,261,996,413	4,393,054,415				
End of Year:						
(3) Market Value of Assets	4,333,501,521	5,295,972,522				
(4a) Contributions	117,979,768	101,588,846				
(4b) Net Disbursements	274,482,624	280,168,724				
(5) Total Investment Income						
=(3)-(1)-(4a)+(4b)	173,368,090	1,141,050,879				
(6) Projected Rate of Return	7.50%	7.50%				
(7) Projected Investment Income						
=(1)x(6)+[(1+(6)) ⁵ -1]x(4a-4b)	317,984,963	318,436,934				
(8) Asset Adjustment	-	-				
(9) Investment Income in Excess of Projected Income	(144,616,873)	822,613,945				
(10) Excess Investment Income Recognized						
This Year (5-year recognition)						
(10a) From This Year	\$ (28,923,375)	\$ 164,522,789				
(10b) From One Year Ago	2,447,256	(28,923,375)	\$ 164,522,789			
(10c) From Two Years Ago	9,929,585	2,447,256	(28,923,375)	\$ 164,522,789		
(10d) From Three Years Ago	28,939,665	9,929,585	2,447,256	(28,923,375)	\$ 164,522,789	
(10e) From Four Years Ago	(42,817,236)	28,939,664	9,929,585	2,447,258	(28,923,373)	\$ 164,522,789
(10f) Total Recognized Investment Gain/(Loss)	(30,424,105)	176,915,919	147,976,255	138,046,672	135,599,416	164,522,789
(11) Change in Actuarial Value of Assets						
=(4a)-(4b)+(7)+(8)+(10f)	131,058,002	316,772,975				
End of Year:						
(3) Market Value of Assets	\$ 4,333,501,521	\$ 5,295,972,522				
(12) Final Actuarial Value of Assets as of 6/30 = (2)+(11)	\$ 4,393,054,415	\$ 4,709,827,390				
(13) Difference between Market & Actuarial Values	(59,552,894)	586,145,132				
(14) Estimated Market Value Rate of Return on Total Plan Assets	4.09%	26.88%				
(15) Estimated Market Value Return on Invested Plan Assets ¹	3.41%	26.34%				
(16) Actuarial Value Rate of Return	6.87%	11.51%				
(17) Ratio of Actuarial Value to Market Value	101%	89%				

¹ Rate calculated and provided by the County.



Development of Actuarial Value of Assets (Assets Allocated to GRIP)

Fiscal Year Ending	2020	2021	2022	2023	2024	2025
Beginning of Year:						
(1) Market Value of Assets	\$ 183,641,709	\$ 199,935,848				
(2) Actuarial Value of Assets	181,485,157	203,010,320				
End of Year:						
(3) Market Value of Assets	199,935,848	265,580,775				
(4a) Contributions	17,220,945	19,836,603				
(4b) Net Disbursements	8,614,557	9,353,375				
(5) Total Investment Income						
=(3)-(1)-(4a)+(4b)	7,687,751	55,161,699				
(6) Projected Rate of Return	7.50%	7.50%				
(7) Projected Investment Income						
=(1)x(6)+[(1+(6)) ⁵ -1]x(4a-4b)	14,090,033	15,381,203				
(8) Asset Adjustment	-	-				
(9) Investment Income in Excess of Projected Income	(6,402,282)	39,780,496				
(10) Excess Investment Income Recognized						
This Year (5-year recognition)						
(10a) From This Year	\$ (1,280,456)	\$ 7,956,099				
(10b) From One Year Ago	101,852	(1,280,456)	\$ 7,956,099			
(10c) From Two Years Ago	372,635	101,852	(1,280,456)	\$ 7,956,099		
(10d) From Three Years Ago	996,532	372,635	101,852	(1,280,456)	\$ 7,956,099	
(10e) From Four Years Ago	(1,361,821)	996,532	372,633	101,850	(1,280,458)	\$ 7,956,100
(10f) Total Recognized Investment Gain/(Loss)	(1,171,258)	8,146,662	7,150,128	6,777,493	6,675,641	7,956,100
(11) Change in Actuarial Value of Assets						
=(4a)-(4b)+(7)+(8)+(10f)	21,525,163	34,011,093				
End of Year:						
(3) Market Value of Assets	\$ 199,935,848	\$ 265,580,775				
(12) Final Actuarial Value of Assets as of 6/30 = (2)+(11)	\$ 203,010,320	\$ 237,021,413				
(13) Difference between Market & Actuarial Values	(3,074,472)	28,559,362				
(14) Estimated Market Value Rate of Return on Total Plan Assets	4.09%	26.88%				
(15) Estimated Market Value Return on Invested Plan Assets ¹	3.41%	26.34%				
(16) Actuarial Value Rate of Return	6.95%	11.30%				
(17) Ratio of Actuarial Value to Market Value	102%	89%				

¹ Rate calculated and provided by the County.



Allocation of Actuarial Value of Assets by Group

	Valuation as of July 1, 2021							July 1, 2020	
	Non-Public Safety			Public Safety				Total	Total
	Group A	Group H	Group J	Group E	Group F	Group G	GRIP		
Beginning of Year:									
(1) Actuarial Value of Assets ¹	\$ 887,571,113	\$ 675,920,278	\$ 57,554,616	\$ 421,803,185	\$ 1,218,918,349	\$ 928,276,554	\$ 203,010,320	\$ 4,393,054,415	\$ 4,261,996,413
End of Year:									
(2a) County Contributions	\$ 7,867,242	\$ 7,077,610	\$ 1,338,500	\$ 3,665,939	\$ 13,797,225	\$ 25,089,012	\$ 11,905,069	\$ 70,740,597	\$ 87,198,736
(2b) Employee Contributions	<u>1,907,531</u>	<u>2,026,842</u>	<u>846,237</u>	<u>2,515,506</u>	<u>7,755,518</u>	<u>7,865,081</u>	<u>7,931,534</u>	<u>30,848,249</u>	<u>30,781,032</u>
(2c) Total Contributions ²	\$ 9,774,773	\$ 9,104,452	\$ 2,184,737	\$ 6,181,445	\$ 21,552,743	\$ 32,954,093	\$ 19,836,603	\$ 101,588,846	\$ 117,979,768
(3a) Benefit Payments and Refunds	\$ 74,600,088	\$ 53,111,989	\$ 1,432,432	\$ 26,970,092	\$ 61,117,385	\$ 50,957,607	\$ 8,980,116	\$ 277,169,709	\$ 271,423,412
(3b) Administrative Expenses	<u>312,637</u>	<u>291,709</u>	<u>92,793</u>	<u>238,198</u>	<u>920,925</u>	<u>769,494</u>	<u>373,259</u>	<u>2,999,015</u>	<u>3,059,212</u>
(3c) Total Deductions ³	\$ 74,912,725	\$ 53,403,698	\$ 1,525,225	\$ 27,208,290	\$ 62,038,310	\$ 51,727,101	\$ 9,353,375	\$ 280,168,724	\$ 274,482,624
(4) Investment Return (AVA Basis)	\$ 98,541,073	\$ 75,340,019	\$ 6,663,366	\$ 47,385,983	\$ 138,070,565	\$ 105,823,982	\$ 23,527,865	\$ 495,352,853	\$ 287,560,858
(5) Actuarial Value of Assets	\$ 920,974,234	\$ 706,961,051	\$ 64,877,494	\$ 448,162,323	\$ 1,316,503,347	\$ 1,015,327,528	\$ 237,021,413	\$ 4,709,827,390	\$ 4,393,054,415
(6) AVA Rate of Return	11.53%	11.52%	11.51%	11.52%	11.52%	11.52%	11.30%	11.51%	6.87%

¹ Actuarial value of assets by group is from the actuarial valuation as of July 1, 2020.

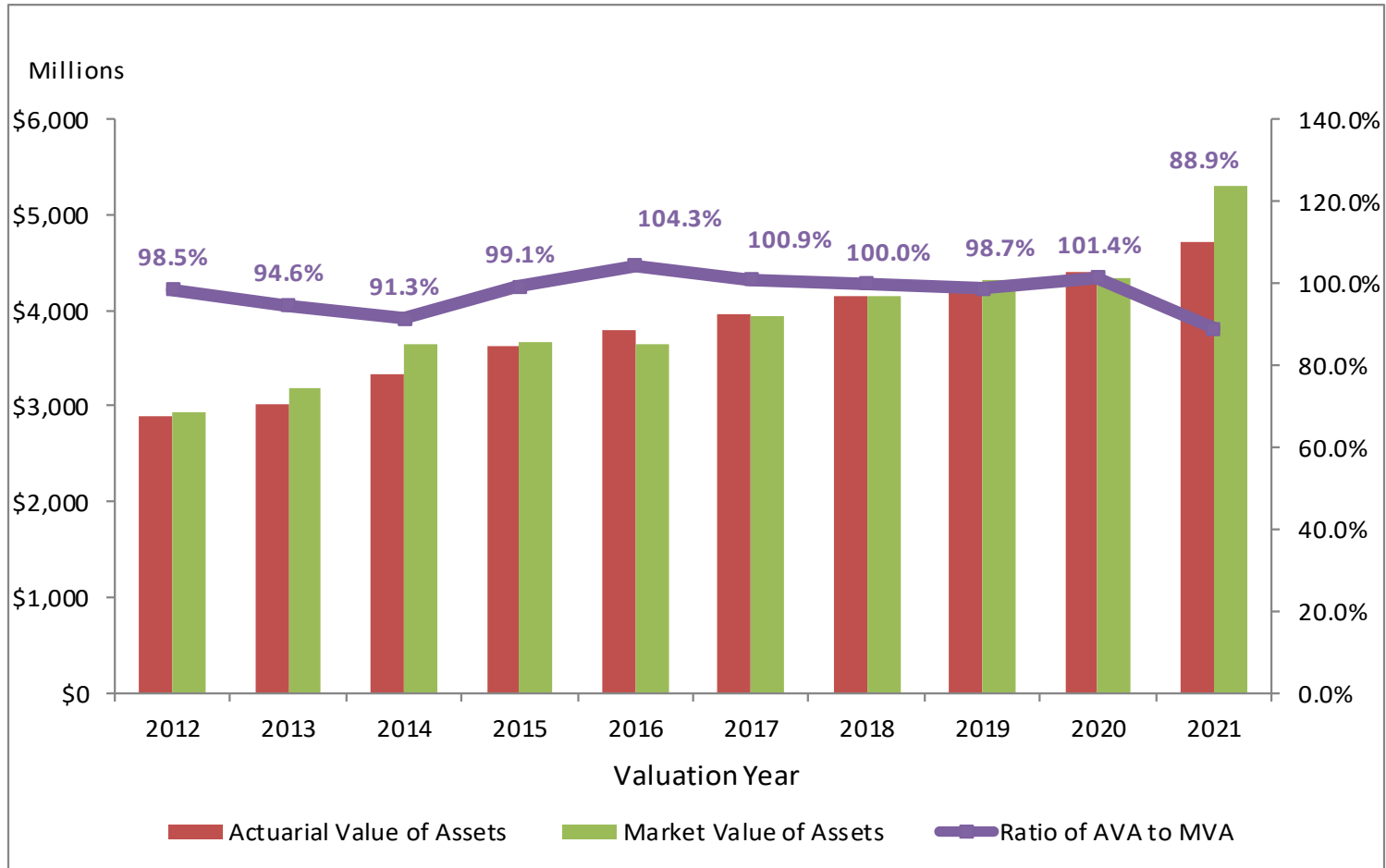
² Contributions by group allocated based on fiscal year 2021 contribution rates and expected fiscal year 2021 payroll from the prior actuarial valuation as of July 1, 2020.

³ Deductions by group allocated based on amounts projected by group from the prior actuarial valuation as of July 1, 2020.

Beginning in fiscal year 2019, Group J is included with the Non-Public Safety groups.



Historical Comparison of Actuarial Value of Assets to Market Value of Assets (Total ERS)



SECTION B

ACTUARIAL VALUATION DATA

Summary of Participant Data (July 1, 2021 and July 1, 2020)

	Valuation as of July 1, 2021							Total
	Non-Public Safety			Public Safety				
	Group A	Group H	Group J	Group E	Group F	Group G	GRIP	
Total All Plans								
Active Members								
Number	246	371	128	455	1,138	1,166	2,710	6,214
Average Age	60.1	60.2	48.3	41.6	39.5	39.1	47.7	45.4
Average Service	30.5	28.7	14.3	10.9	13.7	12.5	7.6	12.2
Total Base Payroll	\$ 27,798,731	\$ 30,580,669	\$ 11,636,643	\$ 34,488,873	\$ 100,877,180	\$ 99,825,446	\$ 201,170,217	\$ 506,377,759
Contribution Basis Payroll:								
For Normal Cost	\$ 25,328,337	\$ 27,828,933	\$ 10,917,797	\$ 33,054,592	\$ 97,328,622	\$ 96,410,386	\$ 192,932,189	\$ 483,800,856
For Amortization of Unfunded Liability*	19,698,603	23,714,471	11,636,643	34,488,873	100,877,180	99,825,446	201,170,217	491,411,433
DRSP/DROP Members								
Number				41	119	65		225
Total Base Payroll				\$ 4,357,478	\$ 12,822,036	\$ 7,598,071		\$ 24,777,585
Total Benefits				2,409,670	8,719,663	4,885,388		16,014,721
Terminated Vested Members								
Number	29	35	4	27	42	22	444	603
Total Benefits	\$ 535,568	\$ 303,167	\$ 31,773	\$ 427,676	\$ 450,362	\$ 184,609		\$ 1,933,155
Retired Members and Beneficiaries								
Number							7	6,618
Total Benefits							\$ 90,776	\$ 269,997,317
Total Membership							3,161	13,660

	Valuation as of July 1, 2020							Total
	Non-Public Safety			Public Safety				
	Group A	Group H	Group J	Group E	Group F	Group G	GRIP	
Total All Plans								
Active Members								
Number	272	406	136	472	1,221	1,176	2,521	6,204
Average Age	59.7	59.7	47.2	41.6	39.7	38.9	47.5	45.2
Average Service	29.7	28.2	13.1	10.8	13.9	12.3	7.4	12.3
Total Base Payroll	\$ 31,034,982	\$ 33,509,002	\$ 12,019,670	\$ 35,359,622	\$ 108,264,848	\$ 99,771,359	\$ 183,697,027	\$ 503,656,510
Contribution Basis Payroll:								
For Normal Cost	\$ 28,328,610	\$ 30,635,099	\$ 11,334,524	\$ 33,855,269	\$ 104,164,939	\$ 96,401,700	\$ 176,052,318	\$ 480,772,459
For Amortization of Unfunded Liability*	22,338,336	26,340,962	12,019,670	35,359,622	108,264,848	99,771,359	183,697,027	487,791,824
DRSP/DROP Members								
Number				39	73	64		176
Total Base Payroll				\$ 4,106,934	\$ 7,781,153	\$ 7,443,267		\$ 19,331,354
Total Benefits				2,130,864	5,044,890	4,552,955		11,728,709
Terminated Vested Members								
Number	33	41	1	29	28	19	378	529
Total Benefits	\$ 318,008	\$ 342,848	\$ 4,929	\$ 442,288	\$ 234,092	\$ 118,179		\$ 1,460,344
Retired Members and Beneficiaries								
Number							5	6,607
Total Benefits							\$ 70,130	\$ 258,118,052
Total Membership							2,904	13,516

*Excludes Non-GRIP UAL Payroll from Outside Agencies. As of July 1, 2021, this amount is \$1,729,791, and as of July 1, 2020, this amount is \$1,873,108.



Summary of Active Participant Data by Plan

Valuation as of July 1, 2021 Including DROP/DRSP Actives								
	Non-Public Safety			Public Safety			GRIP	Total
	Group A	Group H	Group J	Group E	Group F	Group G		
Optional Non-Integrated								
Number	1	2	-	-	-	1		4
Total Base Payroll	\$ 98,730	\$ 198,777	\$ -	\$ -	\$ -	\$ 113,760		\$ 411,267
Optional Integrated								
Number	2	3	-	-	-	-		5
Total Base Payroll	\$ 194,514	\$ 248,448	\$ -	\$ -	\$ -	\$ -		\$ 442,962
Mandatory Integrated								
Number	243	366	128	496	1,257	1,230		3,720
Total Base Payroll	\$ 27,505,487	\$ 30,133,443	\$ 11,636,643	\$ 38,846,351	\$ 113,699,216	\$ 107,309,757		\$ 329,130,897
GRIP								
Number							2,710	2,710
Total Base Payroll							\$ 201,170,217	\$ 201,170,217
Total All Plans								
Number	246	371	128	496	1,257	1,231	2,710	6,439
Total Base Payroll	\$ 27,798,731	\$ 30,580,669	\$ 11,636,643	\$ 38,846,351	\$ 113,699,216	\$ 107,423,517	\$ 201,170,217	\$ 531,155,344
Valuation as of July 1, 2021 Excluding DROP/DRSP Actives								
	Non-Public Safety			Public Safety			GRIP	Total
	Group A	Group H	Group J	Group E	Group F	Group G		
Optional Non-Integrated								
Number	1	2	-	-	-	1		4
Total Base Payroll	\$ 98,730	\$ 198,777	\$ -	\$ -	\$ -	\$ 113,760		\$ 411,267
Optional Integrated								
Number	2	3	-	-	-	-		5
Total Base Payroll	\$ 194,514	\$ 248,448	\$ -	\$ -	\$ -	\$ -		\$ 442,962
Mandatory Integrated								
Number	243	366	128	455	1,138	1,165		3,495
Total Base Payroll	\$ 27,505,487	\$ 30,133,443	\$ 11,636,643	\$ 34,488,873	\$ 100,877,180	\$ 99,711,686		\$ 304,353,312
GRIP								
Number							2,710	2,710
Total Base Payroll							\$ 201,170,217	\$ 201,170,217
Total All Plans								
Number	246	371	128	455	1,138	1,166	2,710	6,214
Total Base Payroll	\$ 27,798,731	\$ 30,580,668	\$ 11,636,643	\$ 34,488,873	\$ 100,877,180	\$ 99,825,446	\$ 201,170,217	\$ 506,377,758



Summary of Active Participant Data by Outside Agencies

Valuation as of July 1, 2021

	Assessment and Taxation	CRU 92 Credit		District Court	Housing Opportunities Commission	Revenue Authority	Town of Chevy		Washington Suburban Transit Commission	Total Agency	Total Non- Agency	Total ERS
		Circuit Court	Union				Strathmore Hall	Chase				
Non-GRIP Membership												
Active Members												
Number	-	1	1	-	19	2	2	-	-	25	3,479	3,504
Average Age	-	70.6	60.8	-	62.6	52.5	56.9	-	-	61.6	43.5	43.6
Average Service	-	50.0	30.8	-	31.3	31.2	27.9	-	-	31.7	15.6	15.7
Total Base Payroll	\$ -	\$ 98,730	\$ 132,200	\$ -	\$ 1,778,630	\$ 100,483	\$ 292,793	\$ -	\$ -	\$ 2,402,836	\$ 302,804,706	\$ 305,207,542
DRSP/DROP Members												
Number											225	225
Total Base Payroll											\$ 24,777,585	\$ 24,777,585
Total Benefits											\$ 16,014,721	\$ 16,014,721
Terminated Vested Members												
Number	-	-	-	-	6	-	-	1	-	7	152	159
Total Benefits	\$ -	\$ -	\$ -	\$ -	\$ 34,987	\$ -	\$ -	\$ 4,366	\$ -	\$ 39,353	\$ 1,893,802	\$ 1,933,155
Retired Members and Beneficiaries												
Number	18	4	7	7	150	19	5	4	1	215	6,396	6,611
Total Benefits	\$ 1,183,075	\$ 96,628	\$ 330,869	\$ 227,771	\$ 3,879,894	\$ 303,138	\$ 188,267	\$ 100,622	\$ 16,174	\$ 6,326,438	\$ 263,580,103	\$ 269,906,541
Total Non-GRIP Membership	18	5	8	7	175	21	7	5	1	247	10,252	10,499
GRIP Membership												
Active Members												
Number	-	-	-	-	114	5	9	1	-	129	2,581	2,710
Average Age	-	-	-	-	49.6	46.5	43.6	43.1	-	49.0	47.6	47.7
Average Service	-	-	-	-	7.2	3.3	5.5	10.5	-	7.0	7.6	7.6
Total Base Payroll	\$ -	\$ -	\$ -	\$ -	\$ 8,192,205	\$ 309,826	\$ 490,425	\$ 36,674	\$ -	\$ 9,029,129	\$ 192,141,088	\$ 201,170,217
Terminated GRIP Members	-	-	-	-	46	4	8	-	-	58	386	444
Retired GRIP Members	-	-	-	-	-	-	-	-	-	-	7	7
Total GRIP Membership	-	-	-	-	160	9	17	1	-	187	2,974	3,161
Total GRIP and Non-GRIP Membership	18	5	8	7	335	30	24	6	1	434	13,226	13,660



Age/Service by Group as of July 1, 2021

Group A

Current Age	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 and Over	Totals	Valuation Payroll
Under 25	-	-	-	-	-	-	-	-	-	0	\$ -
25-29	-	-	-	-	-	-	-	-	-	0	-
30-34	-	-	-	-	-	-	-	-	-	0	-
35-39	-	-	1	-	-	-	-	-	-	1	99,236
40-44	-	-	-	3	-	-	-	-	-	3	276,132
45-49	-	-	1	-	2	3	3	-	-	9	813,558
50-54	-	-	-	2	1	21	20	-	-	44	4,633,604
55-59	-	-	-	2	2	25	31	7	-	67	7,508,198
60-64	-	-	2	-	5	11	36	10	4	68	8,165,756
65-69	-	1	1	-	1	10	16	6	3	38	4,535,383
70-74	-	-	-	-	-	6	2	2	1	11	1,168,261
75 and Over	-	-	-	-	-	1	2	1	1	5	598,603
Total	-	1	5	7	11	77	110	26	9	246	\$ 27,798,731

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Current Valuation		Previous Valuation	
Average Age:	60.1	Average Age:	59.7
Average Service:	30.5	Average Service:	29.7
Average Annual Pay:	\$ 113,003	Average Annual Pay:	\$ 114,099
Vested Participants	246	Vested Participants	272
Nonvested Participants	-	Nonvested Participants	-
Total Participants	246	Total Participants	272

Group H

Current Age	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 and Over	Totals	Valuation Payroll
Under 25	-	-	-	-	-	-	-	-	-	0	\$ -
25-29	1	1	-	-	-	-	-	-	-	2	123,493
30-34	-	-	-	-	-	-	-	-	-	0	-
35-39	2	-	3	1	-	-	-	-	-	6	438,141
40-44	2	1	1	1	2	-	-	-	-	7	527,657
45-49	1	-	1	3	4	4	-	-	-	13	1,150,403
50-54	1	1	2	5	11	27	17	-	-	64	5,266,959
55-59	-	-	1	7	14	25	34	5	-	86	7,215,281
60-64	-	-	1	-	5	32	39	12	6	95	7,959,400
65-69	-	-	1	2	4	14	30	5	7	63	5,164,207
70-74	-	-	-	-	3	4	8	4	6	25	2,020,108
75 and Over	-	-	1	-	-	4	1	1	3	10	715,020
Total	7	3	11	19	43	110	129	27	22	371	\$ 30,580,669

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Current Valuation		Previous Valuation	
Average Age:	60.2	Average Age:	59.7
Average Service:	28.7	Average Service:	28.2
Average Annual Pay:	\$ 82,428	Average Annual Pay:	\$ 82,534
Vested Participants	364	Vested Participants	401
Nonvested Participants	7	Nonvested Participants	5
Total Participants	371	Total Participants	406



Age/Service by Group as of July 1, 2021

Group J

Current Age	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 and Over	Totals	Valuation Payroll
Under 25	-	-	-	-	-	-	-	-	-	0	\$ -
25-29	-	2	-	-	-	-	-	-	-	2	139,928
30-34	12	1	2	-	-	-	-	-	-	15	1,021,390
35-39	2	3	5	2	-	-	-	-	-	12	952,305
40-44	2	3	3	7	3	-	-	-	-	18	1,690,995
45-49	4	5	1	6	7	4	-	-	-	27	2,604,786
50-54	3	1	5	5	6	1	-	-	-	21	2,028,629
55-59	1	2	1	6	5	1	1	-	-	17	1,697,281
60-64	2	1	1	3	1	-	3	-	-	11	1,040,818
65-69	-	-	1	1	1	-	1	-	-	4	373,842
70-74	-	1	-	-	-	-	-	-	-	1	86,669
75 and Over	-	-	-	-	-	-	-	-	-	0	-
Total	26	19	19	30	23	6	5	-	-	128	\$ 11,636,643

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Current Valuation		Previous Valuation	
Average Age:	48.3	Average Age:	47.2
Average Service:	14.3	Average Service:	13.1
Average Annual Pay:	\$ 90,911	Average Annual Pay:	\$ 88,380
Vested Participants	102	Vested Participants	100
Nonvested Participants	26	Nonvested Participants	36
Total Participants	128	Total Participants	136

Group E

Current Age	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 and Over	Totals	Valuation Payroll
Under 25	13	-	-	-	-	-	-	-	-	13	\$ 699,277
25-29	49	8	-	-	-	-	-	-	-	57	3,282,683
30-34	39	22	4	-	-	-	-	-	-	65	4,069,026
35-39	26	22	14	8	-	-	-	-	-	70	4,781,953
40-44	12	9	13	23	10	-	-	-	-	67	5,556,503
45-49	18	4	10	30	17	3	-	-	-	82	6,910,192
50-54	4	4	6	19	22	5	2	-	-	62	5,875,688
55-59	4	3	3	11	6	2	-	-	-	29	2,416,739
60-64	-	-	3	2	2	-	-	-	-	7	613,351
65-69	-	-	-	-	2	1	-	-	-	3	283,461
70-74	-	-	-	-	-	-	-	-	-	0	-
75 and Over	-	-	-	-	-	-	-	-	-	0	-
Total	165	72	53	93	59	11	2	-	-	455	\$ 34,488,873

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Current Valuation		Previous Valuation	
Average Age:	41.6	Average Age:	41.6
Average Service:	10.9	Average Service:	10.8
Average Annual Pay:	\$ 75,800	Average Annual Pay:	\$ 74,914
Vested Participants	290	Vested Participants	307
Nonvested Participants	165	Nonvested Participants	165
Total Participants	455	Total Participants	472



Age/Service by Group as of July 1, 2021

Group F

Current Age	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 and Over	Totals	Valuation Payroll
Under 25	39	-	-	-	-	-	-	-	-	39	\$ 2,125,337
25-29	110	42	-	-	-	-	-	-	-	152	9,539,895
30-34	41	149	20	-	-	-	-	-	-	210	15,479,712
35-39	10	41	108	48	-	-	-	-	-	207	18,425,215
40-44	4	9	28	135	22	-	-	-	-	198	19,770,387
45-49	1	11	8	50	82	9	-	-	-	161	16,917,829
50-54	-	1	3	27	40	50	5	-	-	126	13,599,609
55-59	-	-	-	5	7	10	12	1	-	35	4,046,838
60-64	-	-	1	1	-	1	2	3	-	8	796,478
65-69	-	1	1	-	-	-	-	-	-	2	175,880
70-74	-	-	-	-	-	-	-	-	-	0	-
75 and Over	-	-	-	-	-	-	-	-	-	0	-
Total	205	254	169	266	151	70	19	4	-	1,138	\$ 100,877,180

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Current Valuation		Previous Valuation	
Average Age:	39.5	Average Age:	39.7
Average Service:	13.7	Average Service:	13.9
Average Annual Pay:	\$ 88,644	Average Annual Pay:	\$ 88,669
Vested Participants	933	Vested Participants	1,036
Nonvested Participants	205	Nonvested Participants	185
Total Participants	1,138	Total Participants	1,221

Group G

Current Age	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 and Over	Totals	Valuation Payroll
Under 25	34	1	-	-	-	-	-	-	-	35	\$ 1,875,387
25-29	110	42	-	-	-	-	-	-	-	152	9,278,014
30-34	88	113	29	4	-	-	-	-	-	234	16,502,620
35-39	32	61	75	73	4	-	-	-	-	245	20,934,024
40-44	10	32	33	83	33	1	-	-	-	192	18,363,816
45-49	7	6	14	45	65	8	1	-	-	146	15,144,369
50-54	4	4	10	28	34	28	19	-	-	127	13,878,215
55-59	-	2	2	1	9	5	8	-	-	27	2,986,053
60-64	-	-	-	1	-	-	1	1	1	4	484,142
65-69	-	-	2	1	-	-	-	-	1	4	378,806
70-74	-	-	-	-	-	-	-	-	-	0	-
75 and Over	-	-	-	-	-	-	-	-	-	0	-
Total	285	261	165	236	145	42	29	1	2	1,166	\$ 99,825,446

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Current Valuation		Previous Valuation	
Average Age:	39.1	Average Age:	38.9
Average Service:	12.5	Average Service:	12.3
Average Annual Pay:	\$ 85,614	Average Annual Pay:	\$ 84,840
Vested Participants	881	Vested Participants	920
Nonvested Participants	285	Nonvested Participants	256
Total Participants	1,166	Total Participants	1,176



Age/Service by Group as of July 1, 2021

GRIP

Current Age	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 and Over	Totals	Valuation Payroll
Under 25	12	4	-	-	-	-	-	-	-	16	\$ 793,867
25-29	123	28	2	-	-	-	-	-	-	153	8,278,400
30-34	218	101	6	4	-	-	-	-	-	329	21,088,636
35-39	208	101	21	4	-	-	-	-	-	334	23,909,039
40-44	180	94	27	17	2	-	-	-	-	320	23,591,393
45-49	173	105	27	33	16	1	-	-	-	355	27,652,348
50-54	161	90	44	34	32	5	-	-	-	366	27,320,232
55-59	112	96	49	50	42	6	-	-	-	355	28,988,538
60-64	72	78	37	45	42	10	-	-	-	284	23,136,254
65-69	19	35	29	22	27	13	-	-	-	145	12,073,643
70-74	7	7	12	11	6	2	-	-	-	45	3,642,483
75 and Over	-	1	-	4	1	2	-	-	-	8	695,385
Total	1,285	740	254	224	168	39	-	-	-	2,710	\$ 201,170,217

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Current Valuation		Previous Valuation	
Average Age:	47.7	Average Age:	47.5
Average Service:	7.6	Average Service:	7.4
Average Annual Pay:	\$ 74,233	Average Annual Pay:	\$ 72,867
Vested Participants	1,984	Vested Participants	1,798
Nonvested Participants	726	Nonvested Participants	723
Total Participants	2,710	Total Participants	2,521

Total All Groups

Current Age	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 and Over	Totals	Valuation Payroll
Under 25	98	5	-	-	-	-	-	-	-	103	\$ 5,493,867
25-29	393	123	2	-	-	-	-	-	-	518	30,642,412
30-34	398	386	61	8	-	-	-	-	-	853	58,161,383
35-39	280	228	227	136	4	-	-	-	-	875	69,539,913
40-44	210	148	105	269	72	1	-	-	-	805	69,776,884
45-49	204	131	62	167	193	32	4	-	-	793	71,193,484
50-54	173	101	70	120	146	137	63	-	-	810	72,602,936
55-59	117	103	56	82	85	74	86	13	-	616	54,858,928
60-64	74	79	45	52	55	54	81	26	11	477	42,196,199
65-69	19	37	35	26	35	38	47	11	11	259	22,985,222
70-74	7	8	12	11	9	12	10	6	7	82	6,917,521
75 and Over	-	1	1	4	1	7	3	2	4	23	2,009,008
Total	1,973	1,350	676	875	600	355	294	58	33	6,214	\$ 506,377,759

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Current Valuation		Previous Valuation	
Average Age:	45.4	Average Age:	45.2
Average Service:	12.2	Average Service:	12.3
Average Annual Pay:	\$ 81,490	Average Annual Pay:	\$ 81,183
Vested Participants	4,800	Vested Participants	4,834
Nonvested Participants	1,414	Nonvested Participants	1,370
Total Participants	6,214	Total Participants	6,204



Schedule of Active Member Data as of July 1, 2021

Valuation Date 7/1	Number	Annual Payroll	Average Annual Pay	% Increase in Avg Pay
2012	5,554	\$398,460,248	\$71,743	-2.39%
2013	5,606	395,988,026	70,636	-1.54%
2014	5,535	402,899,096	72,791	3.05%
2015	5,541	418,728,584	75,569	3.82%
2016	5,513	427,622,475	77,566	2.64%
2017	5,738	444,274,516	77,427	-0.18%
2018	6,004	467,974,450	77,944	0.67%
2019	6,003	476,619,112	79,397	1.86%
2020	6,204	503,656,510	81,183	2.25%
2021	6,214	506,377,759	81,490	0.38%

Prior to the July 1, 2014 valuation, counts and payroll include DRSP and DROP members.

Schedule of Members in Pay Status as of July 1, 2021

Valuation Date 7/1	Annuitants	Survivors	Disableds	Total Number	Total Annual Benefits	Total Average Annual Benefit
2012	4,309	438	1,077	5,824	\$203,710,715	\$34,978
2013	4,412	448	1,101	5,961	210,686,878	35,344
2014	4,669	452	1,121	6,242	229,568,856	36,778
2015	4,807	448	1,125	6,380	235,612,875	36,930
2016	4,882	445	1,126	6,453	240,863,796	37,326
2017	4,947	453	1,116	6,516	245,139,028	37,621
2018	5,031	465	1,119	6,615	255,539,421	38,630
2019	5,128	471	1,132	6,731	266,179,533	39,545
2020	5,190	466	1,127	6,783	269,846,761	39,783
2021	5,273 ¹	461 ²	1,109	6,843	286,012,038	41,796

Total Annual Benefits first shown in actuarial valuation report in 2012. Amounts in prior years are not readily available. Beginning with the July 1, 2014 valuation, counts for annuitants and annual benefit amounts include DRSP and DROP members. Annual benefit amounts include total benefit amount for insured retirees (including the benefit amount that is paid by Aetna).

¹ Count includes 117 insured retirees with Total Annual Benefits of \$4,314,236.

² Count includes 88 insured survivors with Total Annual Benefits of \$1,885,615.



SECTION C

ACTUARIAL VALUATION METHODS AND ASSUMPTIONS

Actuarial Cost Method

Normal cost and the allocation of benefit values between service rendered before and after the valuation date were determined using the **Individual Entry-Age Normal actuarial cost method** having the following characteristics:

- The normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement; and
- Each annual normal cost is a constant percentage of the member's year by year projected covered pay.

Financing of Unfunded Actuarial Accrued Liabilities. The unfunded actuarial accrued liability is amortized using a level-percentage of pay amortization of a closed period amortization base. The amortization method was changed from an 18-year closed period amortization of the base established on July 1, 2010, and 20-year closed period amortization of the bases established thereafter, to recombining all amortization bases established prior to July 1, 2015, into a single amortization base equal to the unfunded actuarial liability as of July 1, 2015. The single amortization base as of July 1, 2015, and subsequent unfunded liability arising in future valuations are amortized over a single nine-year closed period for Groups A and H and separate 20-year closed periods for the Public Safety groups, Group J and GRIP beginning July 1, 2015.

Allocation of Unfunded Liability and Amortization Payments by Group. The amortization payments for non-GRIP members are allocated between Groups A, E, F, G, H and J. The amortization payment schedule by group for the bases established prior to the 2012 valuation is based on the allocation established by the prior actuary. The amortization payment schedule by group for the bases established beginning in the 2012 valuation is based on allocations calculated by GRS using a consistent method with the prior actuary.

The unfunded liability as of July 1, 2014 was calculated for each group based on the amortization payment amounts in that valuation and the remaining amortization period for each payment. Beginning with the July 1, 2015 actuarial valuation, changes in the unfunded liability are separately calculated and reported for each group.

The actuarial value of assets by group as of July 1, 2014 was calculated as the difference between the actuarial accrued liability and the unfunded liability as of July 1, 2014. Beginning with the actuarial valuation as of July 1, 2015, the non-GRIP actuarial value of assets by group is calculated using the following methodology:

- 1) Beginning of year actuarial value of assets for each benefit group (calculated in the prior year's valuation); plus
- 2) Non-investment cash flows (allocated based on each group's projected non-investment cash flows from the prior valuation); plus
- 3) Assumed investment return on the actuarial value of assets (rate of return equal to the rate of return on an actuarial value of assets basis for non-GRIP assets).

Actuarial Value of Pension Plan Assets. The calculated value is determined by adjusting the market value of assets to reflect the investment gains and losses (the difference between the actual investment return and the expected investment return) during each of the last five years at the rate of 20 percent per year.



Actuarial Cost Method (Continued)

Contribution Basis Payroll. The payroll for each member who is active at the actuarial valuation date is called the Base Payroll. For purposes of calculating the contribution rates based on the dollar contributions determined, different payroll amounts are used.

Contribution Basis Payroll for Normal Cost is the expected payroll for current active members payable in the upcoming year and reflects that a percentage of members will exit the active population due to retirement, termination, death or disability. This payroll is on a consistent basis with the normal cost dollars shown in the report.

Contribution Basis Payroll for Amortization of Unfunded Liability is equal to the total base payroll for the open groups (groups who are enrolling new members) and projected payroll for the period July 1, 2022 through June 30, 2023 for the closed groups (groups that are closed to new members). The projected payroll for the closed groups reflects that a percentage of members will exit the active population due to retirement, termination, death or disability and no additional employees will be hired into those groups. The objective of using this payroll basis is to have the actual County contribution made in fiscal year 2023 for the amortization of the unfunded liability (which is based on a contribution rate and actual payroll during the year) be as close as possible to the dollar amount calculated in the 2021 actuarial valuation report.

Groups A and H are closed and the remaining groups are open.

Actuarial Assumptions in the Valuation Process

The contribution and benefit values of the System are calculated by applying actuarial assumptions to the benefit provisions and census information furnished, using the actuarial cost method described on the previous page.

The principal areas of financial risk which require assumptions about future experiences are:

- Long-term rates of investment return to be generated by the assets of the Plan;
- Patterns of pay increases to members;
- Rates of mortality among members, retirees and beneficiaries;
- Rates of withdrawal of active members;
- Rates of disability among members; and
- The age patterns of actual retirement.

In an actuarial valuation, the monetary effect of each actuarial assumption is calculated for as long as a present covered person survives; a period of time which can be as long as a century.

Actual experience of the Plan will not coincide exactly with assumed experience. Each actuarial valuation provides a complete recalculation of assumed future experience and takes into account all past differences between assumed and actual experience. The result is a continual series of adjustments (usually small) to the computed contribution rate.

From time to time it becomes appropriate to modify one or more of the assumptions, to reflect experience trends (but not random year-to-year fluctuations). Thus, an experience review of the Montgomery County Employees' Retirement System for the period July 1, 2014 to July 1, 2018 was performed to compare the demographic and economic experience against the actuarial assumptions used in the actuarial valuations. The actuarial assumptions described in this section were adopted by the Directors for use beginning with the July 1, 2019 actuarial valuation. Additional information regarding the rationale for the actuarial assumptions may be found in the 2019 experience review report. All actuarial assumptions are expectations of future experience, not current market measures.

Actuarial Valuation Assumptions

The assumed rate of price inflation is 2.50 percent.

The assumed COLA is as follows:

	Assumed COLA
100% of CPI, benefit attributable to pre 7/1/2011 service	2.50%
60% of CPI, benefit attributable to pre 7/1/2011 service	1.50%
100% of CPI*, benefit attributable to service on or after 7/1/2011	2.20%

**Capped at 2.5 percent.*

The following groups have a COLA equal to 60 percent of the increase in CPI:

- Unrepresented Non-Public Safety Enrolled 7/1/78 & after-retired before 11/1/01
- Certain Sheriffs and Inspectors Enrolled 7/1/78 & after-retired prior to 11/1/01
- Represented Non-Public Safety Enrolled 7/1/78 & after-retired prior to 11/1/01
- Sheriffs/Corrections Enrolled 7/1/78 & after-retired prior to 11/1/01
- Fire Enrolled 7/1/78 & after-retired prior to 3/1/00
- Police Enrolled 7/1/78 & after-retired prior to 3/1/00

The assumed rate of investment return used was 7.50%, net of expenses, annually.

Actuarial Valuation Assumptions (Continued)

The rates of annual salary increase used for individual members are in accordance with the following table. This assumption is used to project a member's current salary to the salaries upon which benefit amounts will be based.

Service At Assumed Pay Increase	Group A, H and GRIP	Group E and J	Group F	Group G
1	6.75%	9.50%	7.75%	10.75%
2	5.75%	9.25%	7.50%	9.25%
3	5.25%	8.00%	7.25%	7.75%
4	5.25%	6.75%	7.00%	7.25%
5	5.25%	6.25%	6.75%	6.75%
6	5.00%	5.75%	5.75%	6.75%
7	5.00%	5.75%	5.50%	6.75%
8	5.00%	5.25%	5.50%	6.75%
9	4.75%	4.75%	5.00%	6.75%
10	4.75%	4.75%	5.00%	6.75%
11	4.25%	4.75%	4.75%	5.25%
12	4.25%	4.75%	4.75%	5.25%
13	4.25%	4.75%	4.75%	5.25%
14	4.25%	4.75%	4.75%	5.25%
15	4.25%	4.75%	4.75%	5.25%
16	4.00%	4.50%	4.50%	4.25%
17	4.00%	4.50%	4.25%	4.25%
18	4.00%	4.50%	4.00%	4.25%
19	4.00%	4.25%	4.00%	4.25%
20	4.00%	4.25%	4.00%	4.25%
21	4.00%	4.00%	3.25%	3.25%
22	3.75%	3.75%	3.25%	3.25%
23	3.75%	3.75%	3.25%	3.25%
24	3.75%	3.75%	3.25%	3.25%
25	3.50%	3.75%	3.25%	3.25%
26	3.50%	3.75%	3.00%	3.25%
27	3.50%	3.75%	3.00%	3.25%
28	3.50%	3.50%	3.00%	3.25%
29	3.50%	3.50%	3.00%	3.25%
30+	3.00%	3.00%	3.00%	3.00%

The assumed rate of total payroll growth used in amortizing the unfunded liability as a level percentage of pay is 3.00 percent.

The assumed increase in the Social Security Taxable Wage Base is 3.00 percent.



Actuarial Valuation Assumptions (Continued)

The mortality assumptions are as follows:

To provide a margin for future mortality improvements, generational mortality improvements from 2010 using projection scale MP-2018 was used.

Type	Assumption
Post-retirement non-disabled	Groups A, H, J and GRIP Pub-2010 Healthy Retiree Mortality Table (for General Employees), sex distinct Groups E, F and G Pub-2010 Healthy Retiree Mortality Table (for Safety Employees), sex distinct
Post-retirement disabled	Groups A, H, J and GRIP Pub-2010 Disabled Retiree Mortality Table (for General Employees), sex distinct Groups E, F and G Pub-2010 Disabled Retiree Mortality Table (for Safety Employees), sex distinct
Pre-retirement non-service connected	Groups A, H, J and GRIP Pub-2010 Employee Mortality Table (for General Employees) , sex distinct Groups E, F and G Pub-2010 Employee Mortality Table (for Safety Employees), sex distinct
Pre-retirement service connected	Groups F and G 15% of the rates from the Pub-2010 Employee Mortality Table (for Safety Employees), sex distinct

Actuarial Valuation Assumptions (Continued)

Groups E, F and G						
Healthy Mortality					Disabled Mortality	
Age	Pre-Retirement Future Life		Post-Retirement Future Life		Future Life	
	Expectancy (years) in 2021		Expectancy (years) in 2021		Expectancy (years) in 2021	
	Male	Female	Male	Female	Male	Female
20	70.37	72.96	67.61	69.88	64.92	67.47
25	65.10	67.65	62.26	64.48	59.73	62.13
30	59.84	62.37	56.92	59.09	54.57	56.85
35	54.60	57.12	51.60	53.73	49.48	51.67
40	49.38	51.89	46.29	48.40	44.43	46.58
45	44.18	46.68	41.04	43.10	39.40	41.52
50	38.99	41.49	35.86	37.86	34.41	36.51
55	33.85	36.33	30.77	32.74	29.52	31.64
60	28.80	31.24	25.86	27.83	24.82	27.03
65	23.89	26.19	21.24	23.16	20.46	22.68
70	19.13	21.22	16.94	18.74	16.41	18.53
75	14.61	16.42	13.01	14.65	12.68	14.61
80	10.39	11.92	9.57	11.03	9.44	11.03
85	6.83	8.07	6.77	8.01	6.76	8.01
90	4.71	5.65	4.71	5.65	4.71	5.65
95	3.42	3.98	3.42	3.98	3.42	3.98
100	2.49	2.80	2.49	2.80	2.49	2.80
105	1.88	2.04	1.88	2.04	1.88	2.04

Life expectancy based on non-service connected mortality rates only.

Actuarial Valuation Assumptions (Continued)

Groups A, H, J and GRIP						
Age	Healthy Mortality				Disabled Mortality	
	Pre-Retirement		Post-Retirement		Future Life	
	Future Life		Future Life		Future Life	
	Expectancy (years) in 2021		Expectancy (years) in 2021		Expectancy (years) in 2021	
	Male	Female	Male	Female	Male	Female
20	71.00	73.48	67.69	70.86	53.43	56.83
25	65.71	68.17	62.31	65.45	48.53	51.61
30	60.42	62.85	56.92	60.05	43.58	46.40
35	55.18	57.56	51.58	54.67	38.91	41.54
40	49.98	52.30	46.26	49.31	34.49	37.04
45	44.80	47.06	40.98	43.98	30.26	32.83
50	39.66	41.85	35.83	38.77	26.33	28.97
55	34.59	36.69	30.91	33.78	22.81	25.54
60	29.64	31.61	26.17	28.90	19.68	22.35
65	24.83	26.63	21.65	24.14	16.78	19.12
70	20.13	21.73	17.37	19.58	13.99	15.76
75	15.54	16.96	13.42	15.30	11.25	12.49
80	11.07	12.35	9.93	11.45	8.69	9.57
85	7.15	8.27	7.06	8.20	6.48	7.18
90	4.94	5.71	4.94	5.71	4.71	5.40
95	3.48	3.99	3.48	3.99	3.44	3.96
100	2.49	2.80	2.49	2.80	2.49	2.80
105	1.88	2.04	1.88	2.04	1.88	2.04

Life expectancy based on non-service connected mortality rates only.



Actuarial Valuation Assumptions (Continued)

Rates of separation from active membership are represented by the following table (rates do not apply to members eligible to retire and do not include separation on account of death or disability). This assumption measures the probabilities of members terminating employment.

Service Beginning of Year	Group A, H and GRIP		Group E and J		Group F and G	
	Male	Female	Male	Female	Male	Female
0	11.50%	12.00%	16.00%	16.00%	7.00%	10.50%
1	9.00%	11.00%	10.00%	14.00%	4.00%	5.00%
2	8.50%	9.00%	6.00%	12.00%	3.50%	4.50%
3	6.50%	8.00%	5.00%	10.00%	3.00%	4.00%
4	6.00%	7.50%	5.00%	8.00%	2.50%	3.50%
5	5.50%	6.50%	5.00%	6.00%	2.25%	3.00%
6	5.00%	5.50%	5.00%	4.00%	2.00%	2.75%
7	4.50%	4.50%	5.00%	4.00%	1.75%	2.50%
8	4.00%	3.50%	4.00%	4.00%	1.50%	2.00%
9	4.00%	3.00%	3.00%	3.00%	1.25%	1.75%
10	3.00%	2.75%	2.00%	2.00%	1.00%	1.00%
11	3.00%	2.75%	1.50%	1.00%	0.75%	0.75%
12	3.00%	2.75%	1.00%	1.00%	0.50%	0.50%
13	3.00%	2.75%	1.00%	1.00%	0.25%	0.25%
14	3.00%	2.75%	1.00%	1.00%	0.25%	0.25%
15	2.50%	2.50%	1.00%	1.00%	0.25%	0.25%
16	2.50%	2.50%	1.00%	1.00%	0.25%	0.25%
17	2.50%	2.50%	1.00%	1.00%	0.25%	0.25%
18	2.50%	2.50%	1.00%	1.00%	0.25%	0.25%
19	2.50%	2.50%	1.00%	1.00%	0.25%	0.25%
20+	2.00%	2.00%	1.00%	1.00%	0.25%	0.25%

Vested participants who terminate are assumed to elect the option with the greater present value:

- 1) *A refund of their accumulated contributions with interest or*
- 2) *A deferred benefit.*



Actuarial Valuation Assumptions (Continued)

Rates of disability were as follows:

Age	Non-Public Safety				Public Safety					
	Groups A and H		Group J		Group E		Group F		Group G	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
20	0.0144%	0.0063%	0.0288%	0.0197%	0.0288%	0.0197%	0.0504%	0.0709%	0.0720%	0.0788%
25	0.0295%	0.0168%	0.0590%	0.0525%	0.0590%	0.0525%	0.1033%	0.1890%	0.1475%	0.2100%
30	0.0604%	0.0448%	0.1207%	0.1400%	0.1207%	0.1400%	0.2113%	0.5040%	0.3018%	0.5600%
35	0.1058%	0.0705%	0.2117%	0.2203%	0.2117%	0.2203%	0.3704%	0.7931%	0.5292%	0.8812%
40	0.1626%	0.1310%	0.3251%	0.4094%	0.3251%	0.4094%	0.5690%	1.4738%	0.8128%	1.6375%
45	0.3092%	0.2456%	0.6184%	0.7674%	0.6184%	0.7674%	1.0822%	2.7626%	1.5460%	3.0695%
50	0.5316%	0.3301%	1.0631%	1.0316%	1.0631%	1.0316%	1.8605%	3.7139%	2.6578%	4.1265%
55	0.7573%	0.3469%	1.5147%	1.0841%	1.5147%	1.0841%	2.6507%	3.9029%	3.7867%	4.3365%
60	0.7573%	0.3469%	1.5147%	1.0841%	1.5147%	1.0841%	2.6507%	3.9029%	3.7867%	4.3365%

The assumed split of service-connected and non-service connected disabilities is as follows:

Group	Total	Total	Service Connected Disability	
	Non-Service	Service	Total Incapacity	Partial Incapacity
	Connected	Connected	70% Benefit	52.5% Benefit
A and H	65%	35%	17.5%	17.5%
E and J	60%	40%	10.0%	30.0%
F	33%	67%	20.0%	46.7%
G	5%	95%	30.0%	65.0%



Actuarial Valuation Assumptions (Continued)

Rates of retirement for members eligible to retire during the next year were as follows:

Age	Groups A and H		Groups E and J			Group F			Group G			GRIP	
	Under 30 Years of Service	30 Years of Service and Over	Under 25 Years of Service	25 Years of Service and Over	First DROP Eligibility (Group E Only)	Under 25 Years of Service	25 Years of Service	26 Years of Service and Over	Under 20 or 21 - 24 Years of Service	20 Years of Service	25 Years of Service and Over	Under 15 Years of Service	15 Years of Service and Over
Under 42			3.50%	3.50%		2.50%	10.00%	10.00%	2.50%	2.50%	2.50%		
42			3.50%	3.50%		2.50%	10.00%	10.00%	5.00%	5.00%	5.00%		
43			3.50%	3.50%		2.50%	10.00%	10.00%	5.00%	5.00%	5.00%		
44			3.50%	3.50%		2.50%	10.00%	10.00%	5.00%	5.00%	5.00%		
45	2.00%	2.00%	3.50%	8.00%		2.50%	10.00%	10.00%	5.00%	15.00%	7.50%		
46	2.00%	2.00%	3.50%	8.00%	18.00%	3.00%	10.00%	10.00%	5.00%	15.00%	7.50%		
47	2.00%	2.00%	3.50%	8.00%	18.00%	4.00%	10.00%	10.00%	5.00%	15.00%	7.50%		
48	2.00%	2.00%	3.50%	8.00%	18.00%	4.00%	10.00%	10.00%	5.00%	15.00%	10.00%		
49	2.00%	2.00%	5.00%	20.00%	30.00%	4.00%	10.00%	10.00%	10.00%	20.00%	10.00%		
50	3.00%	12.50%	7.50%	20.00%	30.00%	8.00%	18.00%	18.00%	10.00%	20.00%	10.00%		
51	3.00%	12.50%	7.50%	20.00%	30.00%	8.00%	18.00%	18.00%	10.00%	20.00%	17.50%		
52	3.00%	12.50%	7.50%	20.00%	30.00%	8.00%	18.00%	18.00%	12.50%	22.50%	20.00%		
53	3.00%	12.50%	7.50%	20.00%	30.00%	8.00%	20.00%	20.00%	12.50%	22.50%	20.00%		
54	3.00%	12.50%	7.50%	20.00%	30.00%	12.00%	20.00%	20.00%	12.50%	22.50%	20.00%		
55	6.00%	15.00%	15.00%	30.00%	25.00%	12.00%	50.00%	35.00%	15.00%	25.00%	30.00%	3.00%	3.00%
56	6.00%	15.00%	15.00%	30.00%	25.00%	12.00%	50.00%	35.00%	15.00%	25.00%	30.00%	3.00%	3.00%
57	6.00%	15.00%	15.00%	30.00%	25.00%	15.00%	50.00%	35.00%	15.00%	25.00%	30.00%	4.50%	5.00%
58	6.00%	15.00%	15.00%	30.00%	25.00%	15.00%	50.00%	35.00%	15.00%	25.00%	40.00%	4.50%	6.00%
59	6.00%	15.00%	15.00%	30.00%	25.00%	15.00%	50.00%	35.00%	15.00%	25.00%	40.00%	4.50%	6.50%
60	11.00%	18.00%	15.00%	30.00%	50.00%	20.00%	65.00%	50.00%	30.00%	40.00%	40.00%	4.50%	7.00%
61	13.00%	18.00%	15.00%	30.00%	50.00%	20.00%	65.00%	50.00%	30.00%	40.00%	40.00%	4.50%	7.50%
62	14.00%	18.00%	15.00%	30.00%	50.00%	20.00%	65.00%	50.00%	30.00%	40.00%	40.00%	7.00%	15.00%
63	11.00%	18.00%	15.00%	30.00%	50.00%	25.00%	65.00%	50.00%	30.00%	40.00%	40.00%	7.00%	15.00%
64	11.00%	18.00%	15.00%	30.00%	50.00%	25.00%	65.00%	50.00%	30.00%	40.00%	40.00%	10.00%	15.00%
65	15.00%	18.00%	50.00%	50.00%	85.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	13.00%	20.00%
66	22.00%	25.00%	50.00%	50.00%	85.00%							13.00%	20.00%
67	20.00%	20.00%	50.00%	50.00%	85.00%							13.00%	25.00%
68	20.00%	20.00%	50.00%	50.00%	85.00%							13.00%	25.00%
69	20.00%	20.00%	50.00%	50.00%	85.00%							13.00%	30.00%
70	30.00%	35.00%	100.00%	100.00%	100.00%							25.00%	50.00%
71	30.00%	35.00%										25.00%	50.00%
72	30.00%	35.00%										30.00%	50.00%
73	30.00%	35.00%										30.00%	50.00%
74	30.00%	35.00%										30.00%	50.00%
75	100.00%	100.00%										100.00%	100.00%

Assumption for DRSP and DROP eligible members are as follows:

	Group E (DROP)	Group F (DRSP)	Group G (DROP)
Percent Assumed to Participate	75%	75%	85%
Average Years of Participation	3 years	3 years	3 years



Actuarial Valuation Assumptions (Continued)

Assumed Additional Sick Leave Credit:

Members are assumed to accumulate additional service credit at termination or retirement for unused sick leave credit up to a maximum of 2 years.

Group	Years of Sick Leave Per Year of Credited Service
A	0.026
E, J	0.022
F	0.044
G	0.029
H	0.016

Marital Status:

It is assumed that 80 percent of active participants have an eligible spouse. The male spouse is assumed to be three years older than the female spouse.

Form of Payment:

Plan	Normal Form	Assumed in Valuation
Mandatory Integrated	Life Annuity, guaranteed returned employee contributions with interest	3-Year Certain and Continuous Annuity
Optional Integrated	Life Annuity with 120 monthly payments guaranteed	10-Year Certain and Continuous Annuity
Optional Non-Integrated	Life Annuity with 120 monthly payments guaranteed	10-Year Certain and Continuous Annuity
GRIP	Lump Sum	Lump Sum at Termination or Retirement

Benefit Service:

Exact fractional years of service are used to determine the amount of benefit payable.

Decrement Timing:

All decrements are assumed to occur at the middle of the year.

Decrement Operation:

Turnover decrements do not operate after the member reaches retirement eligibility.

Eligibility Testing:

Eligibility for benefits is determined based upon the age nearest birthday and service on the date the decrement is assumed to occur.

Pay Increase Timing:

End of (fiscal) year.



Actuarial Valuation Assumptions (Concluded)

Expenses: Assumed administrative expenses were added to the Normal Cost and are based on 105 percent of the average of the administrative expenses over the past 3 years. The assumed amount added to the Normal Cost is:

Valuation Year	Actual Administrative Expenses				Assumed Expenses Added to Normal Cost
	3 Years Prior	2 Years Prior	1 Year Prior	3 Year Average	
2019	\$ 3,185,769	\$ 2,870,683	\$ 3,064,250	\$ 3,040,234	\$ 3,192,200
2020	2,870,683	3,064,250	3,059,212	2,998,048	3,148,000
2021	3,064,250	3,059,212	2,999,015	3,040,826	3,192,900

**Assumptions for
Missing or Incomplete
Data:**

Active members:

If payroll was not provided, the current year payroll was set equal to the prior year payroll. For new hires, the current year payroll was set equal to the average payroll for new hires in the same group (A, E, J, F, G, H and GRIP).

Vesting service and credited service were calculated for GRIP members based on date of hire and the valuation date.

Retired members:

If a beneficiary date of birth was not provided for members with a joint and survivor option, it was assumed that there was a beneficiary and males are three years older than their female spouses.

SECTION D

BENEFIT PROVISIONS

Brief Summary of Plan Provisions as of July 1, 2021

Following is a summary of the major plan provisions used in the valuation summarized in this report. Montgomery County is solely responsible for the validity, accuracy and comprehensiveness of this information. If any of the plan provisions shown below are not accurate and complete, the valuation results may differ significantly from those shown in this report and may require a revision of this report. Moreover, these plan provisions may be susceptible to different interpretations, each of which could be reasonable, and the different interpretations could lead to different valuation results.

1. Effective Date of the Plan

August 15, 1965. Latest changes to the plan were made for group A, group E, group F, group G, group H, group J and GRIP members in FY11 and were reflected in the 2011 actuarial valuation. Some of the changes were effective July 1, 2011, while others were effective July 1, 2012.

2. Employee Eligibility Requirements

- A. Optional non-integrated retirement plan: Employees enrolled prior to July 1, 1978, who do not elect to join the integrated retirement plan.
- B. Optional integrated plan: Employees enrolled prior to July 1, 1978, who elect to join the integrated retirement plan.
- C. Mandatory integrated retirement plan: Employees enrolled on or after July 1, 1978. The Plan is closed to Non-Public Safety employees hired or rehired after September 30, 1994.

3. Membership Groups and Eligibility

- Group A: Any employee who is not eligible for coverage under another membership group.
- Group B: Any correctional officer, fire prevention officer or deputy sheriff appointed or promoted to the position on or before June 30, 1978, who has not elected to transfer to another membership group.
- Group D: Any full-time police officer appointed on or before August 15, 1965, who has been continuously employed as a police officer and has not elected to transfer to any other membership group.
- Group E: The chief administrative officer, the director of the council staff, the hearing examiners, the county attorney and each head of a principal department, office or agency of the county government, if appointed before July 30, 1978, or a member having held such position on or before October 1, 1972. Any sworn deputy sheriff and such correctional staff as designated by the chief administrative officer. Non-correctional officers were moved to Group J.
- Group F: Any sworn police officer who is not eligible for coverage under another membership group.



Brief Summary of Plan Provisions as of July 1, 2021 (Continued)

- Group G: Any paid firefighter, paid fire officer or paid rescue service personnel not eligible for coverage under another membership group.
- Group H: Any member, including any probationary employee, who holds a bargaining unit position, unless the member is eligible for membership in Groups B, D, E, F or G.
- Group J: Group J was established as of December 21, 2016. Non-correctional officer employees hired prior to December 21, 2016, who participated in Group E were transferred to Group J on May 28, 2017. Group J members are not eligible for Deferred Retirement Option Plan (DROP) coverage.

4. Member Contributions as a Percent of Regular Base Earnings

Effective July 1, 1989, member contributions are pre-tax and interest shall be credited annually on each member's accumulated contributions at a 4.0 percent annual rate.

A. Optional non-integrated plan:

	Prior to 7/1/2001	Effective 7/1/2001	Effective 7/1/2011	Effective 7/1/2012 and After
Group A	6%	6%	7%	8%
Group B ¹	7%	n/a	n/a	n/a
Group D ²	n/a	n/a	n/a	n/a
Group E, J	7½%	8½%	9½%	10½%
Group F	7½%	8½%	9½%	10½%
Group G	7½%	8½%	9½%	10½%
Group H	6%	6%	7%	8%

¹ The last Group B member retired August 1, 1998

² The last Group D member retired November 1, 1992

B. Optional integrated plan:

	Prior to 7/1/2001 ¹		Effective 7/1/2001 ¹		Effective 7/1/2011		Effective 7/1/2012 and After	
	Up to SSTWB	In excess of SSTWB	Up to SSTWB	In excess of SSTWB	Up to SSTWB	In excess of SSTWB	Up to SSTWB	In excess of SSTWB
Group A	3%	6%	4%	6%	5%	7%	6%	8%
Group B ²	3½%	7%	4½%	7%	n/a	n/a	n/a	n/a
Group D	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Group E, J	3¾%	7½%	4¾%	8½%	5¾%	9½%	6¾%	10½%
Group F	4%	8%	4¾%	8½%	5¾%	9½%	6¾%	10½%
Group G with less than 25 years of service								
	4¾%	8½%	5½%	9¼%	6½%	10¼%	7½%	11¼%
Group G with at least 25 years of service								
	4¾%	8½%	4¾%	8½%	5¾%	9½%	6¾%	10½%
Group H	3%	6%	4%	6%	5%	7%	6%	8%

¹ 7/1/2007 for Group G

² The last Group B member retired February 1, 2008

SSTWB means Social Security Taxable Wage Base.



Brief Summary of Plan Provisions as of July 1, 2021 (Continued)

C. Mandatory integrated plan:

	Prior to 7/1/2001 ¹		Effective 7/1/2001 ¹		Effective 7/1/2011		Effective 7/1/2012 and After	
	Up to SSTWB	In excess of SSTWB	Up to SSTWB	In excess of SSTWB	Up to SSTWB	In excess of SSTWB	Up to SSTWB	In excess of SSTWB
Group A	3%	6%	4%	6%	5%	7%	6%	8%
Group B	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Group D	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Group E, J	3¾%	7½%	4¾%	8½%	5¾%	9½%	6¾%	10½%
Group F	4%	8%	4¾%	8½%	5¾%	9½%	6¾%	10½%
Group G with less than 25 years of service								
	4¾%	8½%	5½%	9¼%	6½%	10¼%	7½%	11¼%
Group G with at least 25 years of service								
	4¾%	8½%	4¾%	8½%	5¾%	9½%	6¾%	10½%
Group H	3%	6%	4%	6%	5%	7%	6%	8%

¹ 7/1/2007 for Group G

5. Credited Service

A member's credited service is the total service rendered under the Employees' Retirement System of Montgomery County, plus credited service earned under State of Maryland and/or Montgomery County Police Relief and Retirement Fund Law or any other Maryland Public Plan, plus any purchased prior service or granted.

- A. Full-time: Full-time members receive one year of credited service for rendering the full normal working time in a 12-month period.
- B. Part-time: Part-time members working less than the normal scheduled workweek for full-time employees on a continuing basis shall receive one year of credited service for each 12-month period.
- C. Combined part-time and full-time: Combined part-time and full-time employees will receive one month of credited service for 176 hours worked each fiscal year. Accumulated hours of 88 to 176 or 15 days or more in any calendar month will equal one month of credited service.
- D. Sick Leave: Any employee whose retirement is effective on or after May 1, 1970, will have 176 hours of accumulated sick leave equivalent to one month of credited service up to a maximum of 4,224 hours. Accumulated sick leave of less than 11 days shall not be credited; 11 to 22 days shall be credited as one month for retirement purposes. Any member who vests on or after October 1, 1971, may have sick leave credited for vesting purposes on the same basis.



Brief Summary of Plan Provisions as of July 1, 2021 (Continued)

6. Average Final Earnings

For members enrolled on or before June 30, 1978, average final earnings are equal to the regular earnings for the 12-month period immediately preceding retirement, or any consecutive 12-month period, if greater.

For members enrolled on or after July 1, 1978, average final earnings are equal to the average of regular annual earnings for the 36-month period immediately preceding retirement, or any consecutive 36-month period, if greater.

7. Social Security Wage Base

For any particular year, the maximum amount of earnings creditable for benefit computation purposes under the Old Age, Survivors and Disabilities Insurance Program established by the Federal Social Security Act.

Year	Social Security Taxable Wage Base
2011	\$106,800
2012	\$110,100
2013	\$113,700
2014	\$117,000
2015	\$118,500
2016	\$118,500
2017	\$127,200
2018	\$128,400
2019	\$132,900
2020	\$137,700
2021	\$142,800

8. Social Security Maximum Compensation Level

The maximum dollar amount of earnings upon which Social Security benefits are based, assuming: (1) an employee's annual compensation is at least as great as the taxable wage base each year, for a 35-year period through the year in which the employee attains Social Security Retirement Age, (2) the employee remained in covered employment during each calendar year, (3) the taxable wage base stays level from date of retirement to Social Security Retirement Age.

9. Social Security Retirement Age

- Age 65 for employees born prior to January 1, 1938.
- Age 66 for employees born on or after January 1, 1938, and prior to January 1, 1955.
- Age 67 for employees born on or after January 1, 1955.

Brief Summary of Plan Provisions as of July 1, 2021 (Continued)

10. Regular Earnings

Gross pay for actual hours worked, excluding overtime.

Imputed Compensation for FY2010 only (effective July 1, 2009):

- Regular earnings for a Group A, E, J or H member who is employed on July 1, 2009, includes amounts as if the member had received an increase of 4.5% in the member's gross pay as of July 1, 2009, except for the purpose of calculating a member's contribution.
- Regular earnings for a Group F member who is employed on July 1, 2009, includes amounts as if the member had received an increase of 4.25 percent in the member's gross pay as of July 1, 2009, except for the purpose of calculating a member's contribution.
- Regular earnings for a Group G member who is employed on July 1, 2009, includes amounts as if the member had received an increase of 4.00 percent in the member's gross pay as of July 1, 2009, except for the purpose of calculating a member's contribution.

11. Benefits

A. Normal Retirement Date:

Age and Service Requirement:

- Group A: Age 60 and five years of credited service, or age 55 and 30 years of credited service (after June 30, 2002, age 60 and five years of credited service, or age 50 and 30 years of credited service for members who are Police Telecommunicators).
- Group B: Age 55 and 15 years of credited service, or age 51 and 30 years of credited service.
- Group D: The requirements contained in the police relief and retirement fund law of the county.
- Group E, J: Age 55 and 15 years of credited service, or age 46 and 25 years of credited service.
- Group F: Age 55 and 15 years of credited service, or 25 years of credited service (effective July 1, 2008; previously, age 55 and 15 years of credited service, or age 46 and 25 years of credited service).
- Group G: Age 55 and 15 years of credited service, or any age with 20 years of credited service (effective July 1, 2007; previously age 55 and 15 years of credited service, or any age with 25 years of credited service).
- Group H: Age 60 and five years of credited service, or age 55 and 30 years of credited service (after June 30, 2002, age 60 and five years of credited service, or age 50 and 30 years of credited service for members who are Police Telecommunicators or members of the Service, Labor and Trades (SLT) bargaining unit).



Brief Summary of Plan Provisions as of July 1, 2021 (Continued)

B. Benefit Amount:

1. Optional non-integrated plan: All groups other than Group E, J, F or G – 2 percent of average final earnings multiplied by years of credited service, up to a maximum of 36 years, plus sick leave credits.
 - Group E, J: 2.4 percent of average final earnings for each of the first 25 years of credited service, plus 2 percent of average final earnings for each year of credited service after 25 years up to a maximum of 31 years, plus sick leave credits. Sick leave credit in excess of 25 years is credited at 2 percent of average final earnings.
 - Group F: 2.4 percent of average final earnings for each year of credited service, up to a maximum of 36 years, plus sick leave credits.
 - Group G: 2.5 percent of average final earnings for each of the first 20 years of credited service, plus 2 percent of average final earnings for each year of credited service after 20 years up to a maximum of 31 years, plus sick leave credits (effective July 1, 2007; previously 2 percent of average final earnings for each of the first 20 years of credited service, plus 3 percent of average final earnings for each year of credited service from 21st year through 24th year, plus 8 percent of average final earnings for the 25th year of credited service, plus 2 percent of average final earnings for each year of credited service after 25 years up to a maximum of 31 years, plus sick leave credits).
2. Integrated plans:
 - a. From date of retirement to Social Security Retirement Age:
 - For groups other than Groups E, J, F or G: 2 percent of average final earnings multiplied by years of credited service, up to a maximum of 36 years, plus sick leave credits.
 - Group E, J: 2.4 percent of average final earnings for each of the first 25 years of credited service, plus 2 percent of average final earnings for each year of credited service more than 25 years up to a maximum of 31 years, plus sick leave credits.
 - Group F: 2.4 percent of average final earnings multiplied by years of credited service, up to a maximum of 36 years of service including sick leave credits. (Effective 7/1/2008; previously 2.4 percent of average final earnings for each year of credited service, up to a maximum of 30 years, plus sick leave credits. Sick leave credit in excess of 30 years is credited at 2 percent of average final earnings).
 - Group G: 2.5 percent of average final earnings for each of the first 20 years of credited service, plus 2 percent of average final earnings for each year of credited service after 20 years up to a maximum of 31 years, plus sick leave credits (effective 7/1/2007; previously 2 percent of average final earnings for each of the first 20 years of credited service, plus 3 percent of average final earnings for each year of credited

Brief Summary of Plan Provisions as of July 1, 2021 (Continued)

service from 21st year through 24th year, plus 8 percent of average final earnings for the 25th year of credited service, plus 2 percent of average final earnings for each year of credited service after 25 years up to a maximum of 31 years, plus sick leave credits).

b. From attainment of Social Security Retirement Age:

- For Groups A, B or H: 1.25 percent of average final earnings up to Social Security maximum covered compensation plus 2 percent of average final earnings above Social Security maximum covered compensation, multiplied by years of credited service up to 36 years, plus sick leave credits.
- Group D: 1 percent of average final earnings up to Social Security maximum covered compensation plus 2 percent of average final earnings above Social Security maximum covered compensation, multiplied by years of credited service up to 36 years, plus sick leave credits.
- Group E, J: 1.25 percent (effective 7/1/2009: 1.65 percent) of average final earnings up to Social Security maximum covered compensation for each year of credited service up to a maximum of 31 years plus sick leave credits, plus 2.4 percent of average final earnings above Social Security maximum covered compensation for each of the first 25 years, and 2 percent of average final earnings above Social Security maximum covered compensation for each year of credited service after 25 years up to a maximum of 31 years, plus sick leave credits. Sick leave credits used for years in excess of 25 years is credited at 2 percent of average final earnings above Social Security maximum covered compensation.
- Group F: 1.65 percent of average final earnings up to Social Security maximum covered compensation for each year of credited service up to a maximum of 36 years including sick leave credits and 2.4 percent of average final earnings above Social Security maximum covered compensation for each year of credited service up to a maximum of 36 years including sick leave credits. (Effective 7/1/2008; previously 1.65 percent of average final earnings up to Social Security maximum covered compensation for each year of credited service up to a maximum of 30 years, plus 1.25 percent of average final earnings up to Social Security maximum covered compensation for each year of credited service in excess of 30 years, plus sick leave credits, and 2.4 percent of average final earnings above Social Security maximum covered compensation for each year of credited service up to a maximum of 30 years, plus sick leave credits. Sick leave credits used for years in excess of 30 years is credited at 2 percent of average final earnings above Social Security maximum covered compensation).
- Group G: 1.71875 percent of average final earnings up to Social Security maximum covered compensation (2.5 percent of average final earnings above Social Security maximum covered compensation) for each of the first 20 years of credited service, plus 1.375 percent of average final earnings up to Social Security maximum covered

Brief Summary of Plan Provisions as of July 1, 2021 (Continued)

compensation (2 percent of average final earnings above Social Security maximum covered compensation) for each year of credited service after 20 years up to a maximum of 31 years, plus sick leave credits.

12. Early Pension

A. Age and service requirements:

- Group A: Age 50 and 15 years of credited service, or age 45 and 20 years of credited service.
- Group B: Age 45 and 15 years of credited service.
- Group D: Not applicable.
- Group E, J: Age 45 and 15 years of credited service, or age 41 and 20 years of credited service.
- Group F: Age 45 and 15 years of credited service, or age 41 and 20 years of credited service.
- Group G: Only normal retirement is allowed (effective 7/1/2007, previously age 45 and 15 years of credited service, or age 41 and 20 years of credited service).

B.

- Group H: Age 50 with 15 years of credited service, or age 45 and 20 years of credited service.

C. Benefit amount: Regular pension accrued, reduced by the following schedule:

		YEARS EARLY										
		0	1	2	3	4	5	6	7	8	9	10
MONTHS EARLY	0	100.00%	98.00%	95.00%	91.00%	86.00%	80.00%	72.00%	64.00%	56.00%	48.00%	40.00%
	1	99.83%	97.75%	94.67%	90.58%	85.50%	79.33%	71.33%	63.33%	55.33%	47.33%	
	2	99.67%	97.50%	94.33%	90.17%	85.00%	78.67%	70.67%	62.67%	54.67%	46.67%	
	3	99.50%	97.25%	94.00%	89.75%	84.50%	78.00%	70.00%	62.00%	54.00%	46.00%	
	4	99.33%	97.00%	93.67%	89.33%	84.00%	77.33%	69.33%	61.33%	53.33%	45.33%	
	5	99.17%	96.75%	93.33%	88.92%	83.50%	76.67%	68.67%	60.67%	52.67%	44.67%	
	6	99.00%	96.50%	93.00%	88.50%	83.00%	76.00%	68.00%	60.00%	52.00%	44.00%	
	7	98.83%	96.25%	92.67%	88.08%	82.50%	75.33%	67.33%	59.33%	51.33%	43.33%	
	8	98.67%	96.00%	92.33%	87.67%	82.00%	74.67%	66.67%	58.67%	50.67%	42.67%	
	9	98.50%	95.75%	92.00%	87.25%	81.50%	74.00%	66.00%	58.00%	50.00%	42.00%	
	10	98.33%	95.50%	91.67%	86.83%	81.00%	73.33%	65.33%	57.33%	49.33%	41.33%	
	11	98.17%	95.25%	91.33%	86.42%	80.50%	72.67%	64.67%	56.67%	48.67%	40.67%	

Unreduced early retirement benefits are available if the member's age and service equals 85 with at least 35 years of credited service.

13. Disability Pension

A. Non-service-connected disability retirement:

Age and service requirement: Five years of credited service.



Brief Summary of Plan Provisions as of July 1, 2021 (Continued)

Amount: The greater of the accrued benefit under 11(B) or 33⅓ percent of final earnings.

B. Service-connected disability retirement:

Age and service requirement: None

Benefit amount:

1. For total incapacity: The greater of the accrued benefit under 11(B) or 66⅔ percent of final earnings.
2. For Group G members: Benefits described in (1.) above are modified as follows:
 - The minimum benefit is 70 percent of final earnings if the member meets the definition of Social Security disability.
 - The minimum benefit is 52½ percent of final earnings if the member is disabled but does not qualify for the 70 percent minimum benefit above. The Chief Administrative Officer of the County may offer a disabled member an alternative position with the County with a 5 percent pay increase in lieu of this disability benefit.
 - Certain causes of disability are automatically deemed to be service-connected.

Effective July 1, 2012, the service-connected benefit amount is modified as follows:

- Total incapacity: The minimum benefit is 70 percent of final earnings if the Disability Review Panel approves. If the member has been granted Social Security disability benefits, the Disability Review Panel must recommend total incapacity status if the Social Security award is based primarily on the impairment for which plan benefits are paid.
- Partial incapacity: The minimum benefit is 52½ percent of final earnings if the member is disabled but does not qualify for the 70 percent minimum benefit above.
- Group G: The Chief Administrative Officer of the County may offer a disabled member an alternative position with the County with a 5 percent pay increase in lieu of this disability benefit. This does not apply to Group F.

14. Termination of Employment

A. Vesting provision:

Service requirement: Effective July 1, 1989, all employees who render five or more years of credited service become fully vested. Previously, vesting was based on a five to 10-year graded vesting schedule. Elected officials become vested after five years of service with a minimum monthly benefit of \$150.



Brief Summary of Plan Provisions as of July 1, 2021 (Continued)

Benefit amount: The monthly vested pension payable at normal retirement date is the benefit determined according to the normal retirement pension provisions based on credited service to the date of termination.

Effective July 1, 2010, unreduced benefit commencement date provision clarification for future terminated vested members: The unreduced benefit commencement date for groups A and H is age 60. The comparable date for groups E, J, F and G members is age 70 ½ for members who are not 55 years old with 15 years of service at their termination date.

B. Return of employee contributions:

A member's contributions plus interest will be refunded if:

- A member's service with the county terminates before the member becomes eligible to vest.
- A member eligible to vest terminates service and voluntarily elects to withdraw.

15. Discontinued Service Pension

Applies if employment ends because of an administrative action and participant has 10 or more years of continuous service. Discontinued service pension begins at early retirement date but no reductions are made for early retirement. A participant may not receive a discontinued service pension if the participant was terminated for cause or resigned.

A. Groups A, E, J, F, G and H

1. Optional Non-Integrated plan members and Optional Non-Integrated plan members who elected to transfer to the Optional Integrated plan on or before September 26, 1983.

Eligibility: 10 or more years of continuous or credited service, and not an elected or appointed member.

Benefit amount: The amount of pension that the participant would receive for a regular retirement modified as follows:

- Substitute final earnings for average final earnings
 - Add 5 percent of final earnings
 - No reduction at Social Security Normal Retirement Age
2. Optional Non-Integrated plan members who transferred to the Optional Integrated plan after September 26, 1983.

Eligibility: 10 or more years of credited or continuous service, and not an elected or appointed member.



Brief Summary of Plan Provisions as of July 1, 2021 (Continued)

Benefit amount: The amount of pension that the participant would receive for a regular retirement modified as follows:

- Substitute final earnings for average final earnings
- Add 5 percent of final earnings

3. Mandatory Integrated plan:

Eligibility: 10 or more years of continuous service and not an elected or appointed member.

Benefit amount: The amount of pension that the participant would receive for a regular retirement without any reduction for early retirement.

B. Elected and appointed members:

On or before September 26, 1983

Eligibility: 10 or more years of credited service and enrolled or re-enrolled *on or before* September 26, 1983, or submits an application to transfer from the optional plan to the integrated plan *before* September 26, 1983.

Benefit amount: Regular pension accrued under 11(B) except that “final earnings” replaces “average final earnings” in the calculation, minimum \$300.00 monthly.

After September 26, 1983

Eligibility: 10 or more years of credited service and enrolled or re-enrolled after September 26, 1983, or submits an application to transfer from the optional plan to the integrated plan after September 26, 1983.

Benefit amount: Regular pension accrued under 11(B) except that “final earnings” replaces “average final earnings” in the calculation, minimum \$300.00 monthly.

C. Notwithstanding the above provisions, any member covered by this plan on April 1, 1970, who has reached early retirement date with 20 years of continuous or credited service, is eligible to receive a pension commencing immediately in an amount not less than 50 percent of final earnings.

16. Death Benefits

A. Non service-connected:

Eligibility: None.



Brief Summary of Plan Provisions as of July 1, 2021 (Continued)

Benefit amount:

1. Return of member contributions with interest;
plus
2. 50 percent of average final earnings if the member was a member of the Employees' Retirement System on or before December 31, 1966, and was a Maryland State plan member on August 15, 1965.
or
3. Alternate death benefits listed under (C.) below.

B. Service-connected:

Eligibility requirement: None

Benefit amount:

1. The spouse* will receive a benefit equal to 25 percent of the member's final earnings, with a minimum of \$250.00 per month. The child will receive a benefit equal to 5 percent of the member's final earnings with a minimum of \$50.00 per month to age 21 or life if disabled;
plus
2. 50 percent of average final earnings if the member was a member of the Employees' Retirement System on or before December 31, 1966, and was a Maryland State plan member on August 15, 1965;
or
3. Alternate death benefits listed under (C.) below.
4. For Group F and Group G members: if the member dies while performing duties for the County, the plan will pay death benefits to the spouse or domestic partner and child as if they were receiving a service-connected disability at the 70 percent minimum benefit level at the time of death and had elected the 100 percent joint and survivor option.

C. Alternative death benefits:

Eligibility: Member was eligible for vesting or retirement.

Benefit amount:

1. Spouse* or child may elect to receive the amount that would have been paid had the member elected to receive a 100 percent joint and survivor pension; plus
2. 50 percent of average final earnings if the member was a member of the Employees' Retirement System on or before December 31, 1966, and was a Maryland State plan member at August 15, 1965.

** Domestic partners who meet the requirements for domestic partnership are also eligible.*



Brief Summary of Plan Provisions as of July 1, 2021 (Continued)

17. Forms of Payment

A. Normal form:

1. Optional non-integrated plan: Lifetime benefit, with first 120 monthly payments guaranteed.
2. Optional integrated plan: Lifetime benefit, with first 120 monthly payments guaranteed.
3. Mandatory integrated plan: Lifetime benefit with refund of remaining contributions and interest.

B. Optional forms: A member may elect an optional form of pension actuarially equivalent to the normal form of retirement, otherwise payable, excluding members who qualified for a non-service-connected disability retirement before reaching early retirement date.

Available forms of payment are:

<i>Modified Cash Refund Annuity</i>	Lifetime benefit with return of employee contributions with interest guaranteed
<i>10-Year Certain and Continuous Annuity</i>	Lifetime benefit with 120 monthly payments guaranteed
<i>Social Security Adjustment Option Combined with either Modified Cash Refund Annuity or a 10-Year Certain and Continuous Annuity</i>	Provides a nearly level total income, from the Plan and Social Security, from date of retirement to date of death. At death, payment will continue to the beneficiary if the guarantee provided under the normal form of payment has not been exhausted.
<i>Joint and Survivor Annuity</i>	Provides a lifetime benefit and a continuation of a percentage of the retiree benefit upon death to the beneficiary. The minimum percentage is 10 percent. A guaranteed payment of employee contributions with interest is provided for the mandatory plan and 120 monthly payments from date of retirement for the optional plans.
<i>Joint and Survivor Annuity with Pop-Up</i>	Provides a lifetime benefit and a continuation of a percentage of the retiree benefit upon death to the beneficiary. The minimum percentage is 10 percent. If the beneficiary predeceases or divorces from the retiree, the monthly benefit pops up to the amount it would have been under the Modified Cash Refund option. A guaranteed payment of employee contributions with interest is provided.
<i>Social Security Adjustment Option Combined with Joint and Survivor Annuity Option</i>	Provides a nearly level total income, from the Plan and Social Security, from date of retirement to date of death and a continuation of a percentage of the retiree benefit upon death to the beneficiary. The minimum percentage is 10 percent.
<i>Social Security Adjustment Option Combined with Joint and Survivor Annuity Pop-Up Option</i>	Provides a nearly level total income, from the Plan and Social Security, from date of retirement to date of death and a continuation of a percentage of the retiree benefit upon death to the beneficiary. The minimum percentage is 10 percent. If the beneficiary predeceases or divorces from the retiree, the monthly benefit pops up to the amount it would have been under the Modified Cash Refund option. A guaranteed payment of employee contributions with interest is provided.



Brief Summary of Plan Provisions as of July 1, 2021 (Continued)

18. Post-Retirement Increases

Optional non-integrated plan: Annual adjustment to the benefit equal to 100 percent of the change in Consumer Price Index for the Washington Metro Area for years and months of credited service before July 1, 2011. For years and months of credited service after June 30, 2011, any adjustment will not exceed 2.5 percent.

Optional integrated plan: Annual adjustment to the benefit equal to 100 percent of the change in Consumer Price Index for the Washington Metro Area for years and months of credited service before July 1, 2011. For years and months of credited service after June 30, 2011, any adjustment will not exceed 2.5 percent.

Mandatory integrated plan:

- Participants who enrolled on or after July 1, 1978, and retired before November 1, 2001 – Annual adjustment to the benefit equal to 60 percent of CPI increase, limited to 5 percent. However, if over age 65 or disabled, then the maximum limit of 5 percent does not apply.
- Participants who enrolled on or after July 1, 1978, and retired on or after November 1, 2001 – Annual adjustment to the benefit equal to 100 percent of the change in Consumer Price Index for the Washington Metro Area up to 3 percent, plus 60 percent of any change in Consumer Price Index greater than 3 percent, not to exceed a total of 7.5 percent for years and months of credited service before July 1, 2011. The maximum 7.5 percent does not apply to disability retirees or retirees over age 65 for years of service before July 1, 2011. For years and months of credited service after June 30, 2011, any adjustment will not exceed 2.5 percent.

Following are the recent COLA increases granted July 1.

COLA Granted July 1	100% of CPI, pre 7/1/2011 service	100% of CPI, capped at 2.5%, post 7/1/2011 service	60% of CPI
2019	1.603%	1.603%	0.962%
2020	-0.088%	-0.088%	-0.053%
2021	3.797%	2.500%	2.278%

Disability Benefits:

For a disability occurring after June 30, 2011, as determined by the Disability Review Panel, any postretirement adjustment of the disability retirement benefit will not exceed 2.5 percent.

Sick Leave:

For purposes of applying any post-retirement adjustment, any sick leave will be credited as years and months of service as of the date of retirement. For participants who retire after July 1, 2011, any post-retirement adjustment will not exceed 2.5 percent on any sick leave credited as years and months of service.



Brief Summary of Plan Provisions as of July 1, 2021 (Continued)

DRSP Participants:

Effective July 1, 2011, any additional sick leave credited as years and months of service at DRSP exit is subject to the 2.5 percent post-retirement adjustment limit.

DROP Participants:

Effective July 1, 2011, any additional sick leave credited as years and months of service at DROP exit is subject to the 2.5 percent post-retirement adjustment limit.

Transferred Service:

For purposes of applying any post-retirement adjustment, any transferred service will be credited as years and months of service as of the date a properly completed application is filed with the Benefits Team. For applications to transfer service credit filed after June 30, 2011, any post-retirement adjustment will not exceed 2.5 percent on the transferred service.

Purchased Service:

For purposes of applying any post-retirement adjustment, any purchased service will be credited as years and months of service as of the date a properly completed application is filed with the Benefits Team. For applications to purchase service credit filed after June 30, 2011, any post-retirement adjustment will not exceed 2.5 percent on the purchased service.

19. Deferred Retirement Option Plan (DROP) for Group E (effective 7/1/2015)

A. Eligibility for DROP entry:

Any group E and J uniformed correctional officers or sworn deputy sheriffs who are at least 55 years old and have at least 15 years of credited service or have attained age 46 and 25 years of credited service may participate in the DROP plan.

B. Exit from DROP:

The first day of any month not to exceed 36 months.

C. The DROP account is:

- A member-directed account outside the System's usual investment.
- Credited with the investment gains and losses of the chosen investments.
- Credited with the monthly benefits that the member would have received if the member had retired at DROP entry.

Upon exit from DROP, the member can receive the DROP account as a lump sum payment or as actuarially equivalent monthly benefits.



Brief Summary of Plan Provisions as of July 1, 2021 (Continued)

D. Post-DROP monthly benefit:

The amount the participant would have received at DROP entry with post-retirement increases for the period in DROP.

E. Disability while in DROP:

Non-Service Connected: The member will receive a pension benefit calculated as if they retired with a non-service connected disability on the date they exited DROP and their DROP account.

Service Connected Disability: The member can elect (i) their DROP account and the post-DROP monthly benefit or (ii) a disability benefit calculated as if the member had never entered DROP.

F. Death while in DROP:

The beneficiary will receive the greater of (i) the death benefit that the beneficiary would have received if the member had died at DROP entry with post-retirement increases plus the DROP account or (ii) the death benefit calculated as if the member had never entered DROP.

G. Member Contributions:

Members do not contribute while in DROP.

20. Discontinued Retirement Service Program (DRSP) for Group F (effective 7/1/2008)

A. Eligibility for DRSP entry:

Any group F member who has attained age 46 and 25 years of credited service may participate in the DRSP plan.

B. Exit from DRSP:

The first day of any month not to exceed 36 months.

C. The DRSP account is:

- A member-directed account outside the System's usual investment.
- Credited with the investment gains and losses of the chosen investments.
- Credited with the monthly benefits that the member would have received if the member had retired at DRSP entry.

Upon exit from DRSP, the member can receive the DRSP account as a lump sum payment or as actuarially equivalent monthly benefits.



Brief Summary of Plan Provisions as of July 1, 2021 (Continued)

D. Post-DRSP monthly benefit:

The amount the participant would have received at DRSP entry with post-retirement increases for the period in DRSP.

E. Disability while in DRSP:

Non-Service Connected: The member will receive a pension benefit calculated as if they retired with a non-service connected disability on the date they exited DRSP and their DRSP account.

Service Connected Disability: The member can elect (i) their DRSP account and the post-DRSP monthly benefit or (ii) a disability benefit calculated as if the member had never entered DRSP.

F. Death while in DRSP:

The beneficiary will receive the greater of (i) the death benefit that the beneficiary would have received if the member had died at DRSP entry with post-retirement increases plus the DRSP account or (ii) the death benefit calculated as if the member had never entered DRSP.

G. Member Contributions:

Members do not contribute while in DRSP.

21. Deferred Retirement Option Plan (DROP) for Group G

A. Eligibility for DROP entry:

Any group G member who has met the age and service requirements for a normal retirement may participate in the DROP plan (*effective 7/1/2007; previously only Group G members with at least 25 years of credited service*).

B. Exit from DROP:

The first day of any month not to exceed 36 months.

C. The DROP account collects:

- The member's contributions while in DROP.
- The monthly benefits that the member would have received if the member had retired at DROP entry.
- 7.5 percent interest on the amount in the account at the beginning of each calendar quarter (8.25 percent interest for members enrolled in DROP before July 1, 2013).

Upon exit from DROP, the member can receive the DROP account as a lump sum payment or as actuarially equivalent monthly benefits.



Brief Summary of Plan Provisions as of July 1, 2021 (Continued)

D. Post-DROP monthly benefit:

The amount the participant would have received at DROP entry with post-retirement increases for the period in DROP.

E. Disability while in DROP:

Non-Service Connected: The member will receive a pension benefit calculated as if they retired with a non-service connected disability on the date they entered DROP and their DROP account.

Service Connected Disability: The member can elect (i) their DROP account and the post-DROP monthly benefit or (ii) a disability benefit calculated as if the member had never entered DROP.

F. Death while in DROP:

The beneficiary will receive the greater of (i) the death benefit that the beneficiary would have received if the member had died at DROP entry with post-retirement increases plus the DROP account or (ii) the death benefit calculated as if the member had never entered DROP.

22. Guaranteed Retirement Income Plan (effective 7/1/2009)

A. Eligibility for GRIP entry:

- Full-time Non-Public Safety employees hired on or after July 1, 2009, who do not participate in the retirement savings plan may make a one-time irrevocable election to participate in the GRIP within the first 150 days of full time employment. Participation in the plan begins 180 days after employment.
- Part-time or temporary Non-Public Safety employees hired on or after October 1, 1994, who do not participate in the retirement savings plan may make a one-time irrevocable election to participate in the GRIP after at least 150 days of employment. Participation in the plan begins 180 days after employment.

B. The GRIP account collects:

- Member contributions (pre-tax unless noted otherwise)
 - a. Non-public safety employees: 4 percent of regular base earnings up to the maximum Social Security wage base plus 8 percent of the excess.
 - b. Public safety employees: 3 percent of regular base earnings up to the maximum Social Security wage base plus 6 percent of the excess.
 - c. Effective July 1, 2011, members had the option to contribute an additional 2 percent of regular earnings for service between June 30, 2011 and July 1, 2012, on an after-tax basis by making an election in writing on or before September 1, 2011.



Brief Summary of Plan Provisions as of July 1, 2021 (Continued)

- Employer contributions
 - a. Non-public safety employees: 8 percent of regular base earnings. Effective July 1, 2011, the employer contribution was 6 percent of regular base earnings for service between June 30, 2011, and July 1, 2012.
 - b. Public safety employees: 10 percent of regular base earnings. Effective July 1, 2011, the employer contribution was 8 percent of regular base earnings for service between June 30, 2011, and July 1, 2012.
- 7.25 percent interest credited from the date of contribution.

C. Vesting Schedule:

- Employees are 100 percent vested in employee contributions at all times.
- County contributions are 0 percent vested from 0-3 years of credited service and 100 percent vested at 3 or more years of credited service.
- Participants become 100 percent vested at death or disability.

D. Normal Form of Payment – Lump sum

E. Optional Forms of Payment:

- Direct rollover
- Life annuity purchased from MCERP

F. Eligible Agencies:

- CC – credit union employees (outside agency)
- CM – union employees (represented)
- CN – non-bargaining employees (non-represented)
- CP – public safety employees
- CZ – elected officials who transferred from the EOP

23. Retirement Incentive Program (effective 6/1/2010 for one time election)

The Retirement Incentive Program offered a one-time election in June 2010 and provided enhanced benefits to 64 group A, group H and group E participants. Each retiree received up to a \$35,000 lump sum payment. The early retirement reductions that would normally apply were reduced for some participants and eliminated for others.

24. Elected Officials' Plan (EOP)

The Elected Officials' Plan is a defined contribution plan within the Employees' Retirement System.



Brief Summary of Plan Provisions as of July 1, 2021 (Continued)

A. Participant and Eligibility:

- Elected officials are eligible to participate in the EOP. An elected official is the sheriff, the state's attorney, a County Council member, the County Executive and any County official elected for a fixed term as specifically provided in the Charter.

Unless an elected official was an active member of a County retirement plan before becoming an elected official, which includes being on leave without pay, an elected official must participate in the EOP upon becoming an elected official. An elected official who chooses to continue to participate in another County retirement plan may become a member of the EOP at any time while an elected official after terminating participation in the other plan.

B. Transfer to the Guaranteed Retirement Income Plan (GRIP):

- An individual who is an elected official after December 6, 2010, may make a one-time irrevocable decision to terminate participation in the EOP and participate in the GRIP. An elected official must elect to participate in the GRIP during the first 150 days after becoming an elected official. Participation will begin on the first pay period after the elected official has been in office for 180 days. The elected official will have his or her EOP account transferred to the GRIP and the amount transferred into the GRIP will become the elected official's beginning GRIP account balance.
- An elected official who does not elect to participate in the GRIP must continue to participate in the EOP.

C. EOP Contributions:

- Employee contributions: 4 percent of pay (regular earnings) on a before-tax basis. Members may make an additional voluntary after tax contributions into the account of up to 7 percent of bi-weekly gross pay.
- Employer contributions: 8 percent of pay (regular earnings before taxes).

25. Changes in plan provisions

There were no changes in plan provisions since the last actuarial valuation as of July 1, 2020.



SECTION E

GLOSSARY OF TERMS

Glossary of Terms

Actuarial Accrued Liability (AAL). The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as “accrued liability” or “past service liability.”

Actuarial Assumptions. Estimates of future plan experience such as investment return, expected lifetimes and the likelihood of receiving a pension from the Pension Plan. Demographic, or “people” assumptions, include rates of mortality, retirement and separation. Economic, or “money” assumptions, include expected investment return, inflation and salary increases.

Actuarial Cost Method. A mathematical budgeting procedure for allocating the dollar amount of the “actuarial present value of future plan benefits” between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the “actuarial funding method.”

Actuarial Present Value of Future Plan Benefits. The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Actuarial Value of Assets (AVA). Smoothed value of assets that recognizes the difference between the expected investment return using the valuation assumption of 7.50 percent and the actual investment return over a five-year period. Dampens volatility of asset value over time.

Amortization. Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

Annual Required Contribution. The sum of the normal cost and amortization of the unfunded actuarial accrued liability.

Asset Return. The net investment return for the asset divided by the mean asset value. Example: if \$1.00 is invested and yields \$1.075 after a year, the asset return is 7.50 percent.

Funded Ratio. The actuarial value of assets divided by the actuarial accrued liability. Measures the portion of the actuarial accrued liability that is currently funded.

Market Value of Assets (MVA). The value of assets currently held in the trust available to pay for benefits of the Pension Plan. Each of the investments in the trust is valued at market price which is the price at which buyers and sellers trade similar items in the open market

Normal Cost (NC). The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as “current service cost.” Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.

Unfunded Actuarial Accrued Liability (UAAL). The difference between the actuarial accrued liability and valuation assets. Sometimes referred to as “unfunded accrued liability.”

